

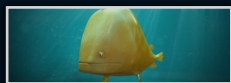
# ALEX OLIVER

We get to know renowned Brazilian sculptor, **Alex Oliver** in our in-depth interview, and then from one Brazilian sculptor to another, we discover how **Raphael Ghencev** tackled this month's cover image for the subject of 'Extreme Piercings & Tattoos' in the latest of the ZBrush Character Creation Series



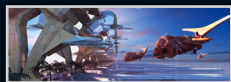
## INTERVIEWS

Alex Oliver & Sebastien Sonet



## ARTICLES

Alter & Food Chain



## GALLERIES

Neil Maccormack, Tomáš Müller, Alexey Kashpersky, plus more!



## TUTORIALS

Speed Sculpting: Four-Legged Fantasy Dinosaur, plus more!



## MAKING OF'S

Reform by Donát Somogyi, plus more!

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## EDITORIAL

Welcome to the December issue of 3DCreative – two score, life begins at ... that's right: 40! For those who aren't up on your bingo lingo, then I'm really just trying to say that we've hit the big 4-0 with 3DCreative magazine. Woop! And for those of you who are interested in bingo nicknames (anyone?) you could say "blind 40" or "naughty 40". I quite like the naughty one myself, so let's bless this December issue of 3DCreative magazine the naughty 40 issue – just because we can! \*grins\*

OK so what do we have for you lovely people? Well first up, for those fans of **Alex Oliver** (and if you say Alex who? then you seriously need to check out this artist's work as you've been missing out!) we have an interview with this extraordinarily talented sculptor – in both a traditional and ZBrush sense (PAGE 007). He talks to us about his inspirations and plans for the future, as well as his love of dinosaurs (God bless Jurassic Park). And for those who are feeling the winter blues and desperately seeking some inspiration, do check out this interview as Alex has kindly given us some tips to keep ourselves inspired, and he points us in the right direction towards getting our drawing skills up to scratch! **Sebastien Sonet** is our second artist under the 3DCreative grill this month, whose extreme sci-fi artworks actually freaked out our proof reader (bless). Sebastien is keen to design creatures for film and TV, and his portfolio certainly impresses, so if you're into your creature design and sci-fi then check out Sebastien's work and find out how it all started for him back in the days of his parents' basement (PAGE 019). Our studio interview this month is with **Alter**, a company that uses a combination of CGI and photography to create a stunning portfolio of photorealistic images for clients (PAGE 027) – plenty of treats for the eyes in that one!

Our tutorial series continue in fantastic formation this month, with part 5 of our tutorial series on creating a complete scene – this month our artists are in the second stage of texturing their scenes (PAGE 098). Our ZBrush speed sculpting tutorials are based on the theme of a four-legged dinosaur (PAGE 057); the artists tackling this topic are actually friends in Brazil, and they hope to bring their creations together in a future artwork, so check out their tutorials and keep an eye out for more from **Diego Maia** and **Walfrido Monteiro**. And what I can say, other than **Rafael Ghencev** has gone ahead and created yet another stunning character for the topic: extreme pierced and tattooed guy? Check it out – it's a stylised character that, with very little influence from the 3DCreative team, has actually turned into pretty much exactly what we imagined when we cooked up this series (PAGE 069). All hats off please to Rafael for this latest instalment, and hold onto your pants for more from him as the months roll on, as the series is far from over yet (hoorah!). Finally, our 'making of' articles this month have been kindly created for us by **Donát Somogyi** (PAGE 081) and **Marco Antonio Delgado** (PAGE 087). Donát discusses the creation of a scene which was inspired by a local abandoned building, and Marco talks cars – of the classic variety. Enjoy! Thanks for your continued support and have a great Christmas everyone. Happy Holidays! ED.

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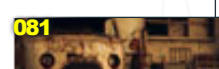
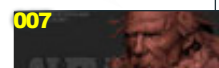
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## ABOUT US

3DTotal.com Ltd Information & Contacts

## AGED &amp; WEATHERED

Part 5 for 3ds Max, Maya, C4D, LW & XSI



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	Matt Lewis	Tom Greenway	
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Chris Perrins	Jo Hargreaves		

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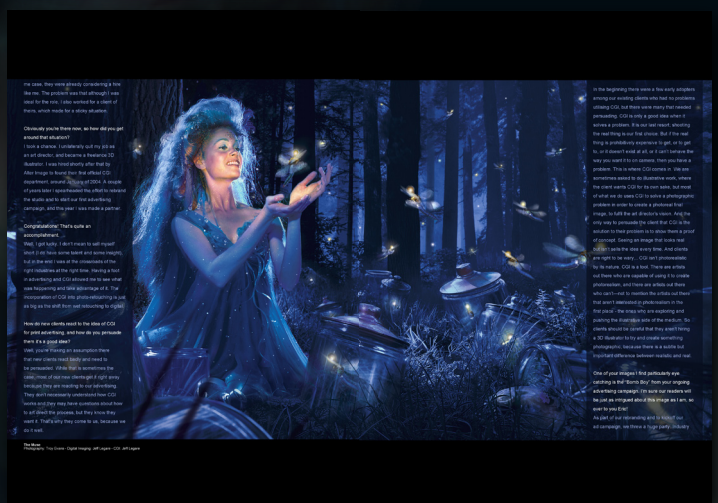
To view the many double-page spreads featured in 2DARTIST magazine, you can set the reader to display 'two-up', which will show double-page spreads as one large landscape image:

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# CONTRIBUTING ARTISTS

Every month, many artists around the world contribute to 3DCreative Magazine. Here you can read all about them. If you would like to be a part of 3DCreative or 2DArtist Magazines, please contact:

[lynette@zoopublishing.com](mailto:lynette@zoopublishing.com)

## AGED & WEATHERED

The start of this tutorial series saw Richard Tilbury tackle the opening 3 chapters. Richard has now handed the Cinema 4D, Lightwave, Maya & Softimage XSI versions over to our latest tutorial artists; these wonderful people will be responsible for creating the remainder of the series. Richard will be continuing with the 3ds Max version.



### RICHARD TILBURY

Has had a passion for drawing since being a couple of feet tall. He studied fine art and was eventually led into the realm of computers several years ago. His brushes have slowly been dissolving in white spirit since the late 90s and now, alas, his graphics tablet has become their successor. He still sketches regularly, balancing his time between 2D and 3D.

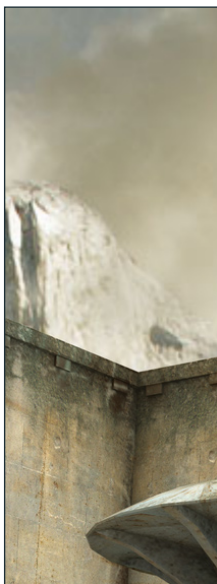
<http://www.richardtilburyart.com>



### LUCIANO IURINO

Started back in '94 with 3D Studio on MS-DOS as a modeller/texture artist. In 2001, he co-founded PM Studios and still works there as Lead 3D Artist. He also works freelance for magazines, web portals, GFX & video game companies. He recently left the 3ds Max environment to move on to XSI.

<http://www.pmstudios.it>  
[iuri@pmstudios.it](mailto:iuri@pmstudios.it)



### ROMAN KESSLER

A freelance 3D artist in Germany. In '93 he made his first 3D model using a shareware 3D software for DOS that was very limited. He got addicted & started with LightWave in '97. Since 2005 he has worked professionally as a freelancer. Besides client-based work, he also works on personal animation projects.

<http://www.dough-cgi.de>



### NIKI BARTUCCI

A freelance 3D modeller in Italy. She started working in the field of computer graphics in 2000 as an illustrator & web designer. In 2003 she started using 3D software, such as C4D & 3ds Max. In that year she worked on *ETROM - The Astral Essence*, an RPG video game for PC, developed by PM Studios.

<http://www.pikoandniki.com>  
[niki@pikoandniki.com](mailto:niki@pikoandniki.com)



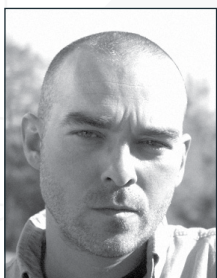
### GIUSEPPE GUGLIEMUCCI

Freelance 3D modeller/ animator. He began using computers with the epoch of the VIC-20 and Cinema 4D was his first 3D software. He started working in the field of CG in '99 in commercial design. In 2003 he worked on *ETROM - The Astral Essence*, an RPG video-game for PC, developed by PM Studios.

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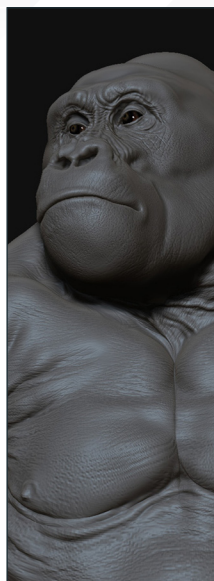
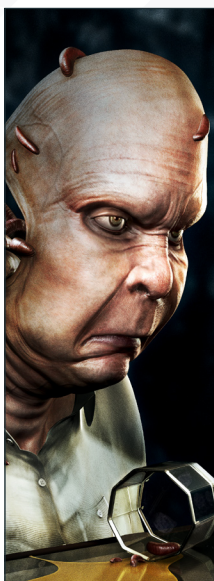


## SEBASTIEN SONET

A designer living and working in the French countryside. He's followed the course of an art school education, during

which time he devoted himself primarily to photography and sculpture. So far in his career he's worked as an Art Director in an artistic branch for web and print, and has been working freelance for two years now.

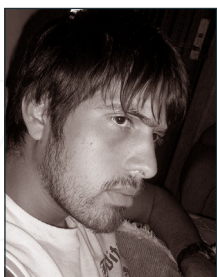
<http://www.xxeb.net>  
[contact@xxeb.net](mailto:contact@xxeb.net)



## ALEX OLIVER

A traditional sculptor who moved to digital art 2 years ago. He is now a digital sculptor and creature/character concept artist, who also teaches ZBrush and traditional sculpting at a 3D school. Alex's work can be seen in many forums around the world, and he's worked on projects such as *Sea Monsters* for National Geographic, and *Golden Axe* with Gentle Giant Studios.

[www.alexoliver.art.br](http://www.alexoliver.art.br) / [mail@alexoliver.art.br](mailto:mail@alexoliver.art.br)



## RAFAEL GHENCEV

Is a 25 year old Character Artist, based in São Paulo, Brazil. He has had a passion for art since he was a young boy and saw his grandfather painting and drawing.

He has since been searching to increase his skills and knowledge, and his passion for sculpture and drawing drives him to balance his studies between traditional art and 3D.

[http:// www.rafestuff.blogspot.com](http://www.rafestuff.blogspot.com)  
[rghencev@yahoo.com](mailto:rghencev@yahoo.com)



## ERIC TOBIASON

Founder of the CGI department and the CGI Director at Alter, a studio that creates images through the combination of photography, digital imaging and CGI for print, web and motion. He's currently based in Chicago, in the USA.

<http://www.thinkalter.com>  
[etobiason@thinkalter.com](mailto:etobiason@thinkalter.com)



**Lady in Red**  
 Photography: Troy Evans - Digital Imaging: Jeff Legare - CGI: Jeff Legare





## WALFRIDO MONTEIRO

A 25 year old character and creature artist living in São Paulo. His fascination for art started during his childhood with

Conan, drawn by John Buscema. He was then fascinated by games – and now by movies. He's always trying to improve his drawing skills, because he believes it is the key for good sculpting work, as well as for art in general.

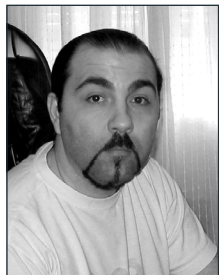
<http://walfrido3d.blogspot.com/>  
walfrido.monteiro@gmail.com



## DIEGO MAIA

A 25 year old artist living in São Paulo, Brazil, currently working as a freelance 3D modeller and concept designer for feature films and games. He loves fine art, comic books, movies and started learning 3D 4 years ago. He's since been working for companies such as Vigil Games, and also gives drawing lessons at an art school in Brazil.

<http://maia3d.blogspot.com/>  
maia3d@gmail.com



## MARCO ANTONIO DELGADO

Born in Spain and has been working for the last 10 years as a freelance CG artist.

Marco took a degree in graphic design, 3D and postproduction and has since created his own studio, Pixeltale, which is a new studio geared towards 3D design for TV, publicity, FX and games.

<http://www.pixeltale.com>  
webmaste@pixeltale.com



## DONAT SOMOGYI

An 18 year old artist currently studying at a grammar school in Hungary. He started CG with web design and 2D graphics, and following that wanted to find bigger challenges for himself. That's when he found 3D graphics, in 2006. He's currently developing his skills in every area of CG, and his plan for the future is to make a living in CG.

<http://next.extra.hu/s.donat@freemail.hu>



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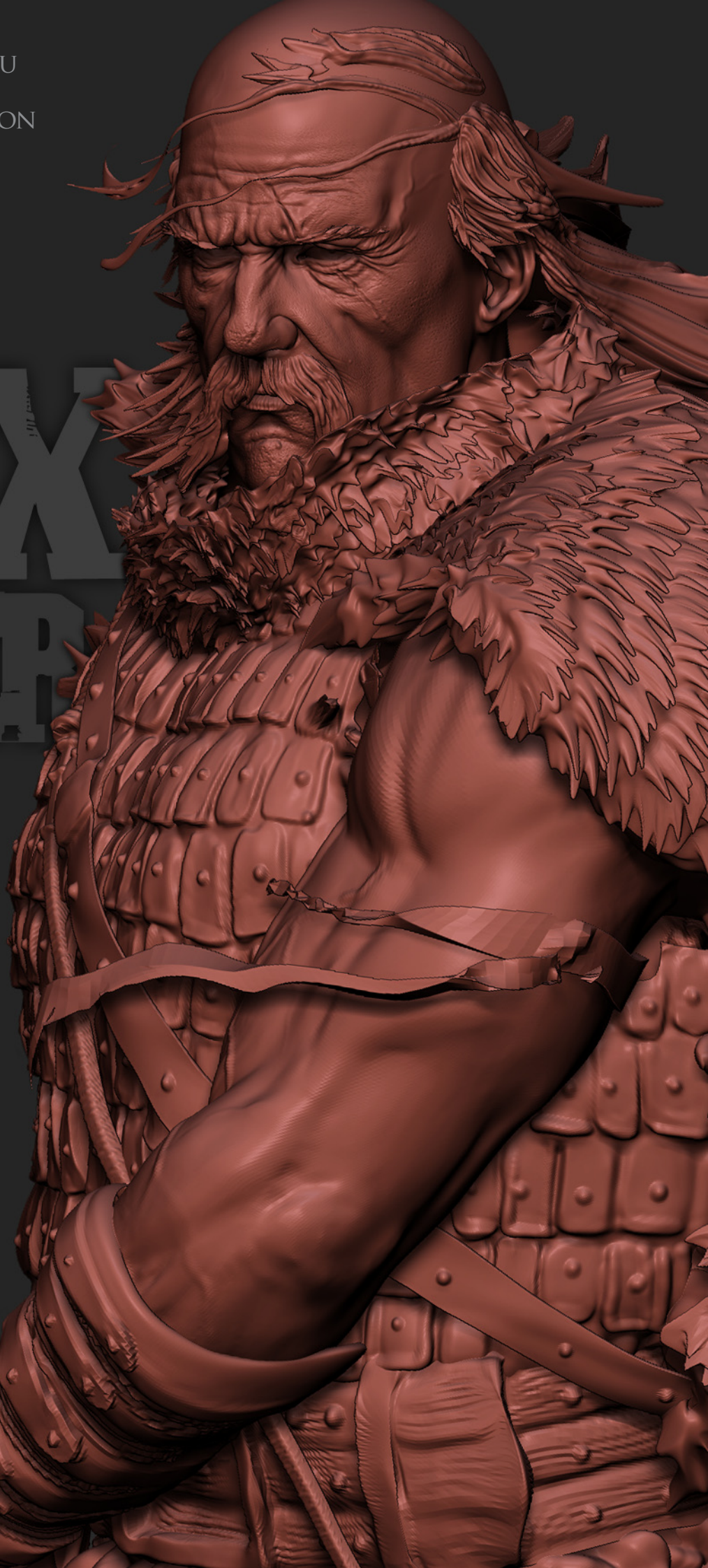
We are always looking for tutorial artists, gallery submissions, potential interviewees, Making Of writers and more. For more information, send a link to your work here: [lynette@zoopublishing.com](mailto:lynette@zoopublishing.com)



"YOU NEED TO LOVE WHAT YOU DO; NOTHING WILL BE GOOD ENOUGH WITHOUT DEDICATION AND LOVE. DEDICATION AND LOVE IS THE SECRET."

# ALEX OLIVER

Alex Oliver is, to many of us, a real master of ZBrush. He's a traditional artist and sculptor at heart, who made the transition into the digital medium in 2003 when he saw many of his friends and co-workers moving into digital sculpting. Having taught himself the software, he is now working on projects for the likes of the National Geographic and also teaches ZBrush to his students in Brazil. Alex kindly took some time out this month to chat to us about his influences and future plans – plenty of inspiration here!





# ALEX OLIVER

Over the past few months we've all been regularly wowed by the stunning ZBrush sculpts that you've been posting on the community forums, and you've become somewhat of a master for those who look to you for inspiration. So to start off this interview, and for those who are (ashamedly) unfamiliar with your work, can you tell us a little about yourself, your art background and how you got into ZBrush?

Hi everybody, my interest for art started many years ago when I saw the making of a Disney classic, called *The Rescuers*; it really changed my childhood. But what really made me dream about someday work with monsters, was the movie *E.T.*, in 1982. Watching the movie again later on in life, I tried to discover for myself how to create a monster. At the time I knew the works of some FX masters, like Stan Winston, Rick Baker, and Dick Smith ... The dinosaurs from the Stan Winston Studio for *Jurassic Park* really changed my life!



© Alex Oliver



© Alex Oliver



© Alex Oliver

After these movies, I spent many years of my life trying to learn traditional sculpting and creature creation. But then, early in 2003, I saw many of my traditional sculptor friends moving towards digital sculpting. It was when I saw just what ZBrush 2.0 could do for a traditional sculptor that my interest really started to move into digital art.

Ah, *Jurassic Park* – a classic film that's created many a great artist! So how did you get yourself into digital sculpting? What were the first steps

you took to get yourself acquainted with ZBrush, and what were the challenges you faced in transferring your traditional skills into 3D digital? Well, it was a big challenge – a very hard thing to do. I was living at the time in a city in Brazil called Fortaleza, and there was nobody there to teach me ZBrush. So my next big problem was to find someone to teach me 3D. I remember that I spent two months just learning about the interface! My students learn about the interface in one hour in my class, and then start the sculpting work.







Learning how software works takes a certain amount of time, but to do really great stuff with it can take ages. You can learn how software works in a few days, and you can also learn anatomy and drawing in a few days, too.

**“I ALWAYS USE REFERENCES;  
I DON'T SEE ANY BENEFIT IN  
TRYING TO WORK WITHOUT  
REFERENCES”**

You constantly impress with your dedication and the attention to detail that you put into your projects, so can you tell us how much forward thinking generally takes place before you start a sculpting project? Do you sketch things out and plan in low poly beforehand, or do you simply grab some reference images and get sculpting? I spend many days looking for good references; I guess that spending time looking for reference material is also a good exercise for inspiration, too. I then turn that inspiration into some initial pencil sketches, and later take those into a finished pencil drawing, before getting into the sculpting work.

Do you ever attempt a sculpting project without references?

No, I always use references; I don't see any benefit in trying work without references. Sometimes I see people in forums who are very proud that they didn't use any references. These people don't need to waste words by actually



© Alex Oliver

coming out and saying it, you just need to see their work to know that no reference was used – it's a big mistake!

Can you share with us some of your favourite references for anatomy; are there any books in particular that you turn to time and time again? And where do you generally look when you're in need of inspiration for a new sculpting project?

Do you have any of your own masters that you look up to and that help you to see your projects from a new perspective?

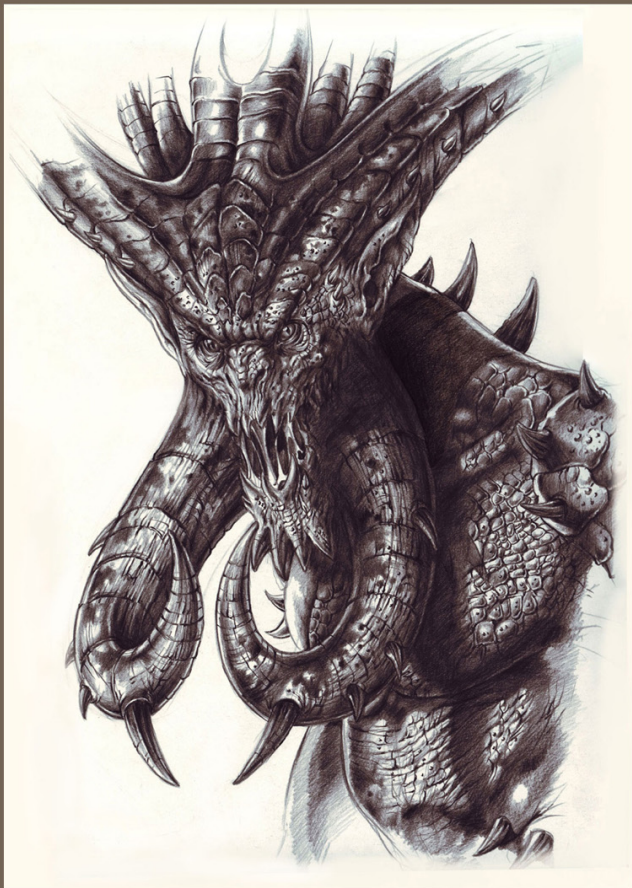
I spend a lot of money buying references books. For anatomy references, one of the best is *Anatomy for the Artist* by Sarah Simblet, and I also love the *Anatomy Drawing School* book by Andras Szunyoghy and Gyorgy Feher. If there's one book that all artists should have, though, then it must be *The Illusion of Life* by Frank Thomas and Ollie Johnston. Then you have all of the Andrew Loomis books which are good, as well as those from Carlos Huante; *Classical Drawing Atelier* by Juliette Aristides is another to add to your collection, as are all of the *Art Models* books by Maureen and Douglas Johnson for anatomy references. And, of course, *The Winston Effect: The Art and History of Stan Winston Studio* is a great source.

But as well as books, I also watch lots of movies to find references and gain inspiration. I also try to watch all different kinds of movies – because



© Alex Oliver







to tell you the truth, I don't particularly like horror movies. You can find inspiration in movies such as *Ben Hur* and *Casablanca* – try to look at things from different angles!

Great, so I'm just thinking now about all the fantastic Brazilian sculptors I've been coming across recently, and so I'm wondering: how important is a traditional sculpting background in learning digital sculpting software?

It's very important. I really don't understand 3D artists who try to sculpt good anatomy without any knowledge of human anatomy. Today, 3D artists need to keep their years of traditional art – the times are changing!

Soon all 3D artists will need to be more than just technically efficient with the software. See the works of my friend Diego Maia (<http://maia3d.blogspot.com/>); did you know that some 3D artists are trying to learn watercolour? Everyday I receive emails from 3D artists with 10 years or more experience asking me how they can learn to sculpt and draw, etc.



Having studied sculpture in the more traditional sense, did you ever feel a certain pressure to “upgrade” your skills to the computer generated medium, or was it simply a natural progression that enabled you to transfer your skills? How important do you think having an understanding of traditional sculpture is to those who are attempting to learn ZBrush without such experience? And can you recommend any exercises that might help those who are keen to try some traditional sculpting to improve their understanding of ZBrush and 3D?

Yeah sure, and I'm still under pressure now! People in the various forums are always asking why I don't animate my models, and why I don't texture my works. The answer is always the same: Because I don't want to do it! I'm a sculptor, not a painter or an animator. I want to be really good in my chosen area, and I feel that I'm slowly approaching that point now. So what I really want to spend my time on is studying human anatomy and trying to let my drawing skills improve.







Going back to your question about what I can recommend to any 3D artists, well my best tip has to be to study traditional drawing. Drawing is the base for any artist. All of the students in my ZBrush class that have some drawing skills also show me a great ability to sculpt in ZBrush.

**“IT’S IMPORTANT TO UNDERSTAND THAT IN ORDER TO BE REALLY GOOD, YOU NEED TO SPEND A LOT OF TIME STUDYING”**

I agree! So as a teacher of ZBrush, what are the most common mistakes, or problems, that your students face when learning the software? I'm just thinking that if we can take note of some of the pitfalls we might be able to learn from the master here!

The most common mistake I think is the believe that you can learn everything in a small amount of time. You know, learn anatomy in three classes, to draw in two – five classes ... Another big mistake is not using any reference images and trying to sculpt human or animal anatomy without pictures or books. It's important to understand that in order to be really good, you need to spend a lot of time studying – be it three, four, five years, or even your whole lifetime.



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Do you want to see someone that's really good at what he does? Then see Vilppu's classic movies and you will understand what a life of dedication can do for you. You need to love what you do; nothing will be good enough without dedication

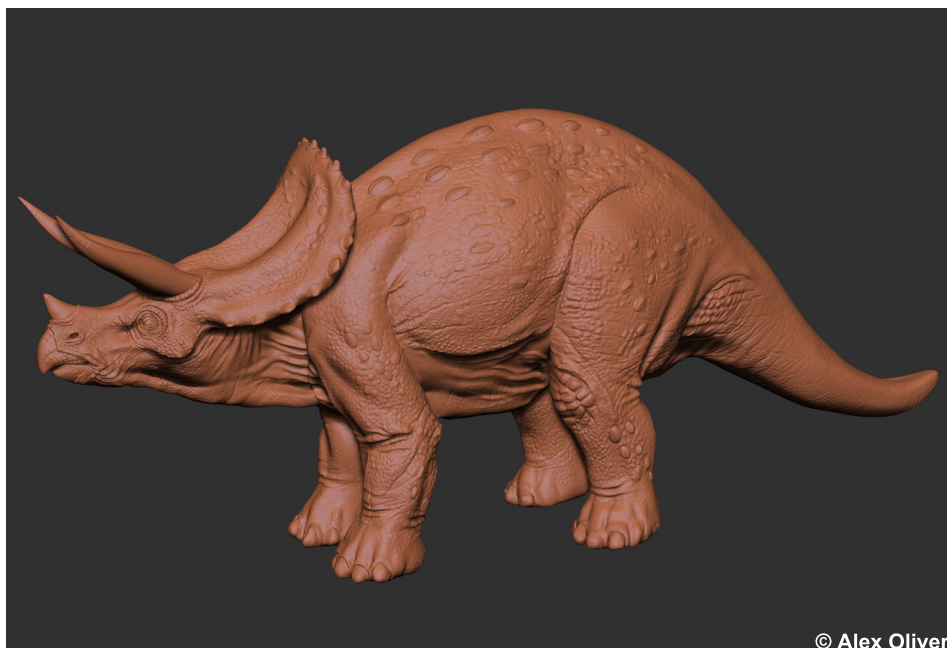
and love. Dedication and love is the secret..

To understand this, I'd recommend watching the movie *Dead Poets Society*. Try to watch different kinds of movies - not just horror or fiction. My inspiration to do what I do now came directly from movies like *Dead Poets Society*...

I think I'll rent that movie this weekend, thanks for the great advice, Alex! If you were to have your choice of any dream project – any at all – what would it be, and why?

Well, I'm working on a dream project right now actually. I really love dinosaurs, and at the moment I'm working on a project for the Discovery Channel. But my main work-related dream will come next year, as I want to work on some full size sculptures.

Why dinosaurs, you might ask? Well I simply love to sculpt them: I love the flesh, the anatomical structure – it would be such a great experience to see these creatures in full size!

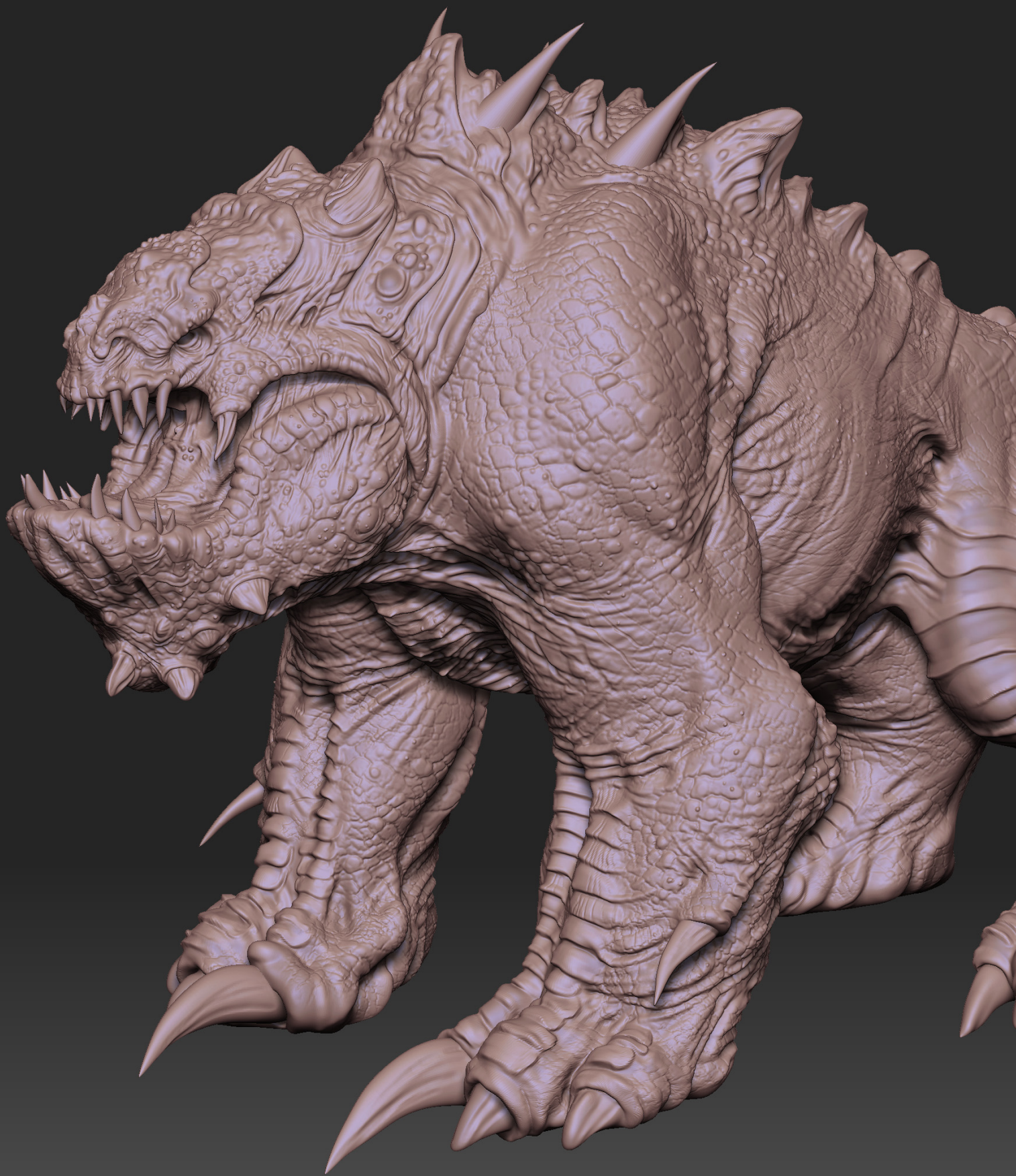


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Yes, I've seen a full-size sculpt of a dinosaur on your website (check it out people!) – it looks fantastic! Do you find more personal satisfaction in traditional sculpting – getting to feel the tools and mould the creation with your own hands? Do you ever feel a certain barrier between you and the screen when sculpting digitally?

Yes, you're right, I did that dinosaur eight years ago, I guess [Laughs]. I really love doing traditional art more than anything. And yes, there is a big difference between when you spend hours and days on a CG model and then later shut down your PC, to when you spend days on a clay sculpture, which you can see in your studio anytime you want – without special lighting or render settings.

“I PREFER TO DREAM  
WITH THINGS THAT I  
CAN CREATE WITH MY  
OWN HANDS, WITHOUT  
WAITING FOR ANYBODY  
OR ANYTHING”

Finally, one last moment of your time, what are your plans for the future? We know you're currently working on the Discovery Channel dinosaur project, but what's next?

Well, there may be big changes next year; I really want to move back to traditional sculpture and drawing again and stop my 3D work for a while. Maybe I will just do some work for myself or for some good clients - any dinosaur projects going? [Laughs]. There are some things that might stand in the way of this change, perhaps some work for a games company in the USA, but that's not confirmed yet.

I prefer to dream with things that I can create with my own hands, without waiting for anybody or anything.

ALEX OLIVER

For more work by this artist please visit:

<http://www.alexoliver.art.br/>

Or contact them at:

[mail@alexoliver.art.br](mailto:mail@alexoliver.art.br)

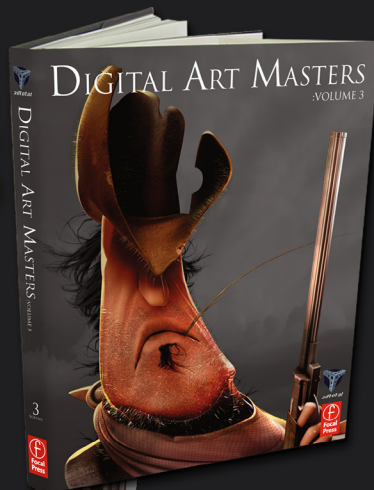
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# SEBASTIEN SONET

Sebastien Sonet is a freelance artist currently working in the advertising industry for web and print, but who secretly harbours a desire to design creatures for film and TV. We recently got the chance to chat to Sebastien and find out a little about where he seeks inspiration from for the mind-blowing creature designs that you'll discover within the following pages...





# SEBASTIEN SONET

Hi Sebastien, how are you? We've been chatting on and off about different images and projects over the past couple of years, so it's great to finally have this opportunity to interview you. Can you start us off with a little introduction about yourself – how you got into 3D and how your decisions since then have seen you progress to where we find you today?

Hello Lynette, it's a pleasure for me to share a moment with you in the pages of 3DCreative.

Well, I am 33 years old and I live in an eastern corner of France, surrounded by trees and cows! I've worked as a freelance designer since 2005, after spending a few years working in an advertising agency as an art director (mainly in web and print). I started 3D at around the same time as my freelance activity, which left me a little more time for research and personal experiments.

I see! So what was it that inspired you to take up 3D? Can you remember what the "trigger" was?

I have always created personal artwork. When I



Sebastien Sonet



Sebastien Sonet

was small, I used to make masks of monsters in latex in the basement of my parents' house. When 3D began to take steps forwards in the cinema, with films like *Jurassic Park*, I was immediately attracted by it. However, it was not so easily accessible at that time. Over the years, computers have become more powerful and software has become more affordable. With the coming of the web and online communities, it became easier to exchange tips and information, and it was in 2003 when I created a CG image for the first time in 3D.

Wow, latex masks sound like great fun to make! Your website (<http://www.xxeb.net/>) gives little away about the creator behind the fantastic 3D artworks that we can find there ... Looking at your portfolio, however, we find a collection of confrontational images – disturbing, grotesque, violent and dark images that really test the viewer! Where do all these unique concepts come from? What are your main sources of inspiration?

I am indeed somewhat unreserved; for a long time I have been adopting





the motto: "Better a vivid picture than a bad speech."

I watch a lot of movies from all genres; I think my main source of inspiration comes from these. In fact, I love the idea of starting with an idea, often simple and obvious, and then allowing it to take on a more dreamlike, more personal, and as you say, darker and more violent element.

What has been the most inspirational movie you've ever seen, in terms of artistic influence? Are there any other sources of inspiration that you regularly use, for example books, other artworks, etc.? I'm just curious to know where these fantastic ideas all emerge from – they're so powerful!

I am an unconditional fan of the great artist and author, Clive Barker. I have read all his books and

I think I have seen all the films to which he has contributed. When *Hellraiser* was released, it came as a real shock to me; my vision shifted and it seemed to answer all of my nightmares!

More recently, I saw an extremely disturbing film, surreal and impregnated with a terrible mood: *Taxidermy*, by György Palfi. And in terms of literature, even if I today lack the time to read everything that I love, I am always ready to read and reread the work of Thomas Bernhard.





Sebastien Sonet

I'll look into that film, *Taxidermy*! From your website we can see that your work has been published in various CG magazines, as well as in *Digital Art Masters: Volume 2* and *d'artiste: Character Modelling 2* books. How important do you find being involved with CG magazines, books and online communities to be, in your progression as an artist in the current industry? I think that the publications which you speak of are essential to convey the current trends of digital imaging. Moreover, whatever one may

say, books still exist – they are fundamental in order to leave a trace in time. It is always a real pleasure for me to see one of my images published in a magazine or a book. That said, online communities are also essential. They provide a fantastic opportunity for artists to receive criticism and comments on their artworks from other people – both novice and professional – and so allow you to keep one foot firmly rooted in the reality of your strengths and weaknesses.

What is the most frequent piece of advice you offer to other artists, to help them in their studies? Do you find that, with having had lots of successful 3D works published, that many artists now turn to you for help and advice? Since I started showing my images, I have regularly received emails from artists asking me for advice and tips. People often ask me to explain my skin shaders, for example, and so I put together several tutorials on this matter, hoping it might help other people. I don't like the



idea of selfishly keeping tips and techniques to yourself. It is by sharing with others that we are able to compare our work and techniques, and therefore evolve as artists.

So out of all your 3D creations to date, which has been your most successful piece or the one that you're most proud of? And what are your plans for future works – what can we look forward to seeing in the coming months?

My favourite image is always the one I'm working on! I also go back somewhat to the look or meaning of my images. Over time, I tend to become technically critical of my own images; all I'll see is that I made a bad choice of light there, or hmm, the texture of the skin of a character is quite average there ... Ultimately, this is quite unattractive. I am not a technician; I have mastered basic 3D software, but I put everything into the idea.

Great, so how long do you generally spend on the concept stage of your artwork then?

If you could divide up the time you spend on completing an artwork, how would your time be divided in percentages? For example, would it be 10% concept, 50% modelling etc? And could you give us a brief walkthrough of how you generally approach your artwork creation, from concept through to the finished piece?

Most of the time I will leave my idea for a picture to mature for a few weeks, before starting to implement it. I then begin to do some research on the Internet based on my image concept; for example, for the image called "Barfly", which refers to the pathology of delirium tremens, I spent quite some time learning about the topic, reading articles and so on, so that I was better informed about the subject. Only when I am convinced of the merits of my intention do I proceed with implementing my idea as a 3D image, which is usually a quick task – a matter of just a few days. The longest stage for me is always the staging of the image (light, composition, and so on), which represents about 50% of the total creation time of one of my artworks.







Sebastien Sonet

So with all the fantastic CG communities around today – growing by the day – artists are able to share their inspirations, test their works, receive feedback and give advice easier than ever! With that in mind, what has been a) the most memorable piece of advice you have ever been given by another artist, and by whom, and b) the most helpful criticism you've ever received – and how did it help?

With the extensive online communities around today, each image can potentially receive both a lot of criticism and advice. I do not think there is such a thing as good or bad criticism. I think if the person giving the advice is sincere, then every piece of criticism from them will be a small brick that will be useful for the next wall. However, from a purely technical point of view, some forums are real gold mines! On the assumption that each question has been asked at least once somewhere in the world, asking one is always a good way to find the answers that we seek!

So do you not have a most memorable piece of advice you've ever received? I think we all have some little pieces of advice that we've been given over the years that we like to remind ourselves of in times where we feel a little stuck. What's yours?

Yes, of course. I think the most practical advice I have ever received – which unfortunately I forget in most cases – is being able to take a step back from an image that you're creating. It is important to move on to something else for a while in order to gain a fresh perspective on your image. When working on the same idea for several days, we tend not to see the work as a whole, but if we can take some time away from the work then we will often find some obvious things – mostly unsuspected – when we return to it.

Great tip! That's something that comes up a lot actually – taking some time out and then going back to your work with a fresh pair of eyes. So

to round off this interview nicely, what are your professional goals right now? Do you have any specific plans or wishes for the near future? If you could be offered the perfect job – right here, right now – what would it be?

As mentioned, I am currently working as a freelance designer in the advertising industry for web and print. I am approached regularly by the video game industry for various project proposals, but unfortunately, I secretly nurture the dream of working for the cinema or television, as a creature designer. I think that to participate in a project built around a scenario of credible and specific artistic intent must be very exciting!

## SEBASTIEN SONET

For more work by this artist please visit:

<http://www.xxeb.net/>

Or contact them at:

[s.sonet@publink.fr](mailto:s.sonet@publink.fr)

Interviewed by: Lynette Clee









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# ALTER

## AN INTERVIEW WITH ERIC TOBIASON

We happened to bump into Eric Tobiason earlier this year at our 3DTotals stand in Siggraph, and after that brief intro, we were eager to find out more about him and his company. So we were pleased when he recently managed to take some time out from his busy schedule to tell us more about the work, clients and CGI department of successful photography/CGI studio, Alter.





# ALTER

AN INTERVIEW WITH ERIC TOBIASON

Okay! Let's dive straight in, so who is Eric Tobiason and what is his company Alter?

Wow. You don't waste any time, do you?

[Laughs].

Cutting right to the chase!

Well, let's see. I'll start with the studio. Alter began as Alter Image in June, 1997, so the studio has been around for a little over eleven years now. It was founded as a photography and retouching studio by Jeff Legare, Bill Prena and Jim Armetta, and today the studio employs about 20 people. From the very beginning their goal was to create impossible images, and that hasn't changed. They were even implementing CGI from a very early stage, before the technology was mature enough for the scale at which we use it today. The retro-future image featuring the woman in a red dress, for example, is almost ten years old now but it incorporates CGI as well as traditional, physical model-making. As the technology improved, they immediately saw the advantages of bringing it into their workflow in a more robust way as



**Bionic Eye**  
Photography: Eric Sahrman - Digital Imaging: Jeff Legare  
CGI: Eric Tobiason



**Shark Cage**  
Photography: Rick Tragesser, Troy Evans - Digital Imaging: Jeff Legare - CGI: Eric Tobiason

a replacement for scale models as well as a tool to create images that would have been impossible even through model-making. But they needed outside help.

I was first introduced to 3D software at the University of Illinois, where I was a member of the Educational Technologies Assistance Group in the Office of Instructional Resources. We were hired by other departments of the university to create educational multimedia programs. I started working there in '91, first as a student and later as a member of staff.

Anyway, I first visited Alter Image around 2002 or 2003. I was an art director at a promotional advertising agency at the time, and I was there to art direct a photo shoot. I was still doing CGI as well, still learning from books and tutorials. I was doing some CGI illustration at the agency that employed me, even at times retouching my CGI into photography shot at Alter Image. I wanted to concentrate on CGI, and I also saw how CGI would be immediately useful blended with quality photography and retouching. I started to lobby Alter Image to hire me. What I didn't know was that at the time I was making







me case, they were already considering a hire like me. The problem was that although I was ideal for the role, I also worked for a client of theirs, which made for a sticky situation.

Obviously you're there now, so how did you get around that situation?

I took a chance. I unilaterally quit my job as an art director, and became a freelance 3D illustrator. I was hired shortly after that by Alter Image to found their first official CGI department, around January of 2004. A couple of years later I spearheaded the effort to rebrand the studio and to start our first advertising campaign, and this year I was made a partner.

Congratulations! That's quite an accomplishment.

Well, I got lucky. I don't mean to sell myself short (I do have some talent and some insight), but in the end I was at the crossroads of the right industries at the right time. Having a foot in advertising and CGI allowed me to see what was happening and take advantage of it. The incorporation of CGI into photo-retouching is just as big as the shift from wet retouching to digital.

How do new clients react to the idea of CGI for print advertising, and how do you persuade them it's a good idea?

Well, you're making an assumption there that new clients react badly and need to be persuaded. While that is sometimes the case, most of our new clients get it right away because they are reacting to our advertising. They don't necessarily understand how CGI works and they may have questions about how to art direct the process, but they know they want it. That's why they come to us, because we do it well.







In the beginning there were a few early adopters among our existing clients who had no problems utilising CGI, but there were many that needed persuading. CGI is only a good idea when it solves a problem. It is our last resort; shooting the real thing is our first choice. But if the real thing is prohibitively expensive to get, or to get to, or it doesn't exist at all, or it can't behave the way you want it to on camera, then you have a problem. This is where CGI comes in. We are sometimes asked to do illustrative work, where the client wants CGI for its own sake, but most of what we do uses CGI to solve a photographic problem in order to create a photoreal final image, to fulfil the art director's vision. And the only way to persuade the client that CGI is the solution to their problem is to show them a proof of concept. Seeing an image that looks real but isn't sells the idea every time. And clients are right to be wary... CGI isn't photorealistic by its nature. CGI is a tool. There are artists out there who are capable of using it to create photorealism, and there are artists out there who can't—not to mention the artists out there that aren't interested in photorealism in the first place - the ones who are exploring and pushing the illustrative side of the medium. So clients should be careful that they aren't hiring a 3D illustrator to try and create something photographic, because there is a subtle but important difference between realistic and real.

One of your images I find particularly eye catching is the "Bomb Boy" from your ongoing advertising campaign. I'm sure our readers will be just as intrigued about this image as I am, so over to you Eric!

As part of our rebranding and to kickoff our ad campaign, we threw a huge party. Industry



professionals were invited to submit image ideas that would be impossible to create through conventional photography alone, and everyone at the party had input on ranking the images. The top three became the first images in our campaign; since then, we've been using images from live jobs. The Bomb Boy sketch was one of the original winners, and it was a... well. I almost said it was a "blast" to create, but I don't need to be that punny. It was a kick. Like I said, unlike later images used in our ad campaign this one wasn't created to sell anything for a client, it is purely conceptual. Eric Sahrman, our people shooter, shot the boy on a pile of rubble in our studio. The mid-ground was scouted and shot on location, while the background was composited from several different stock images. I created and rendered the bombs in Modo. I did some high resolution tests comparing bump maps to displacement, and ended up using displacements for the dirt and scratches because I liked the quality of the highlights and shadows better, and the way it actually broke up the seams and other lines, something that obviously wouldn't happen with bumps. It is almost unnoticeable, which is a way of saying it is noticeable, which is one of the keys to photorealism - you can't have all of the detail clearly visible. The detail has to seem to extend past what is readily visible. For example,



Carhood Cupid  
CGI: Eric Tobiason

**alter**

**Your concepts, realized.**

"[Alter] did literally everything for this piece—from casting, styling, and the photo shoot through creating the CG warehouse and final digital composition, and retouching. The process was seamless and smooth—they're a team that obviously communicates well. And all this on a ridiculously tight timeline with no corners cut or compromise of our vision. We're still blown away by the final piece."  
— David Grillo & Gregory Jones of Brand Pharm USA-New York  
[www.thinkalter.com](http://www.thinkalter.com)

**Future Pain**  
Photography: Troy Evans - Digital Imaging: Jeff Legare, Ray Thornton - CGI: Eric Tobiason

instead of just shading the painted parts green, I used a grunge map to organically blend two slightly different green tones, just to break up the paint and give the impression of subtle wear. My partner Jeff Legare did the compositing and retouching; the boy has had some work done to make him seem a little strange. Big eyes and head, small neck, knobby knees, large hands and feet. It's interesting that you asked about this image, because it is actually one of my favourite images, too.

In your opinion, what are the key elements in a successful CG print advert that seem to occur over and over in each project?

One important factor is time. The more time

you have the better, obviously, but even more important than that is using whatever time you have well. CGI production is complex and you have to plan your time properly in order to maximise quality. Unfortunately there is a practice in the ad business for agencies to ask for things sooner than they really need it, to hoard some time just in case they want to make last-minute revisions. For traditional photo-retouching, adding a couple of days of revisions after a week of work is not a big deal. For CGI, however, five plus two does not equal seven in the same way - it's better to know at the beginning that you have seven days than to aim for five and then add two. Clients who understand this and give us their real deadline





7 Deadly Sins  
Photography: Eric Sahrman - Digital Imaging: Joe Serrano, Jeff Legare - CGI: Eric Tobiason





**Lady in Red**  
Photography: Troy Evans - Digital Imaging: Jeff Legare - CGI: Jeff Legare

upfront always get a better image because we present the work-in-progress for review at art-directable stages anyway, and working toward the actual deadline allows us to invest the maximum amount of time at each stage. It might take two days to render the high-resolution art... so in that case adding two days of revisions at the tail end doesn't actually give us time to make any changes at all, anyway. The paradox is that those two days held back "just in case" would have been better used had they been put on the table at the beginning, and holding them back doesn't lead to a better image, but actually hampers the whole process unnecessarily. Another key element is getting the right input

at the right time. Our workflow breaks CGI production into stages, to maximise efficient art direction. Making all physical changes to the untextured model before we extract UVs and begin texturing is one example. If changes are made to the model at a later stage, we have to backtrack a little to fix or redo UVs and textures when we should really be moving forward. The same change, implemented in the right stage, wouldn't have taken as much time.

Probably the most important element in a successful CG print advert is the question of who dictates the use of CGI. CGI has become something of a buzzword, and studios that don't



**Angry Giant**  
Photography: Troy Evans - Digital Imaging: Jeff Legare  
CGI: Eric Tobiason, John Hernandez





do photography or don't do retouching might have incentive to push the use of CGI because it is, after all, what they sell. We do all three, and our focus is on the best possible final image. There have been times when CGI wasn't the answer to a problem, but the client has insisted that we use it. There have also been times when the opposite has been true, where we were forbidden to use CGI when it would have been the best solution. We consistently get better results when the clients focus on their image, and let us focus on the best way to execute it. So to that point, the question should really be "What are the key elements to a successful print advert image?" To that I'd say the use of

photography, retouching and/or CGI only when needed. The use of CGI should be like good retouching: only used when necessary to fix a problem, and implemented so well that it doesn't stand out.

It was great to meet you in person at Siggraph. What do you find are the main benefits of visiting such as show?

It was good to meet you too, Tom. Our studio is a pioneer for print CGI, but, let's face it, we're not a pioneer in the world of CGI itself. We're a small studio that uses commercial software very well; we don't write software or even our own plug-ins. Siggraph is where the real innovators



are, and it is where I have to go in order to keep abreast of the latest technologies, rub shoulders with the software developers, and hear how others are solving the same problems that I run into day to day. It's great for "a-ha!" moments, as well as an ego boost when you see artists from big name studios coming up with the same solutions and methods that you've come up with independently.

How do you see Alter developing in the future?

We're looking at options for expansion, as well as partnerships with other pioneers in this new industry. I can't reveal any specifics on either of those fronts, except to say that in four to five years we will probably be directly employing twice as many people as we do today - and possibly helping to support many more in several locations around the country and the world. At that size we would be able to afford our own programmers. We're looking to attract at least two more senior-level artists immediately, or at least as soon as we can tear down a couple of walls in our studio to make room. We're interested in shoring up our high-frequency modelling capabilities, as well as FX for print... you know, fire, smoke, water effects. A lot of CGI artists are interested in movies and games, but print advertising has its draw as well. Timelines are much shorter, the average job is two to three weeks, so the artist has the opportunity to work on a much larger variety of material. Also, the teams are smaller, so there is more artistic ownership of the final image. I was the only CG artist to work on the Bomb Boy image, for example. Oh, and the money isn't bad, either!

## ALTER

### AN INTERVIEW ERIC TOBIASON

For more information please visit:

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new 3D SPOT FROM BUCK

# FOOD CHAIN

A toaster with feet; an armchair with teeth and a Dumbo squid ... it can only be the latest 3D spot from bi-coastal, design-driven studio Buck! Developed for Channel Five (UK) television, in partnership with agency DixonBaxi, Buck presents: "Food Chain"!





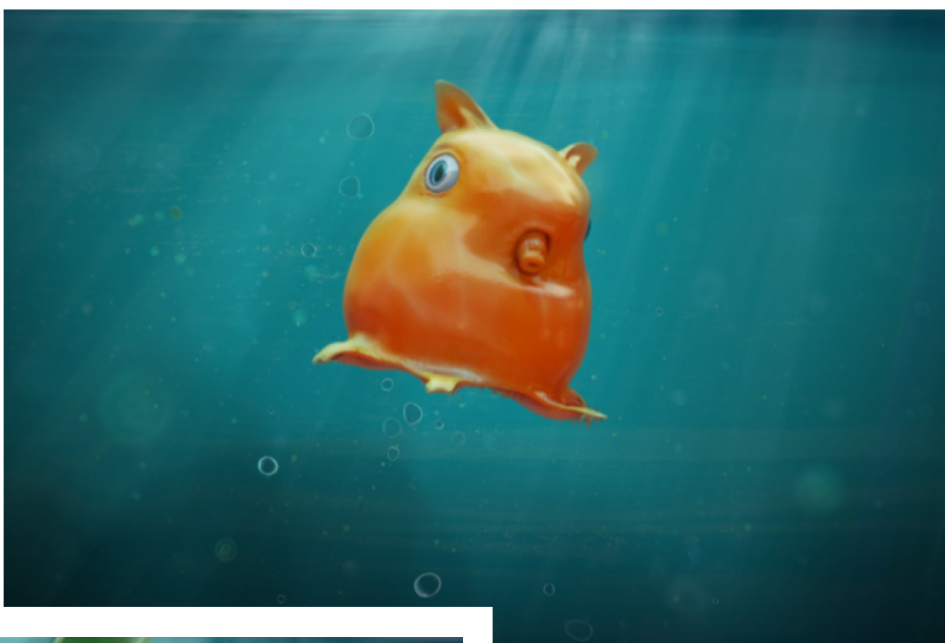
# FOOD CHAIN

NEW 3D SPOT FROM BUCK

When it comes to the food chain, you just never know what's going to come out on top, or end up inside. At least, that's the way things go down in the collective imagination of Buck (<http://www.buck.tv>). In a shiny new station ID for the United Kingdom's popular Channel Five (<http://www.five.tv>), the creative minds and 3D talents at the bi-coastal design-driven studio helped agency DixonBaxi (<http://www.dixonbaxi.com>) create a rapid series of evolutionary ingestions that begin with a bright orange "Dumbo Squid" and end in a bright red armchair.

DixonBaxi founder Aporva Baxi commented, "The experience of working with Buck on Five was very creative and highly collaborative. The process was seamless and everything they did was to an exceptionally high standard, taking our high expectations and consistently managing to exceed them."

"DixonBaxi was rebranding Channel Five, and they had an idea for what they called 'brand



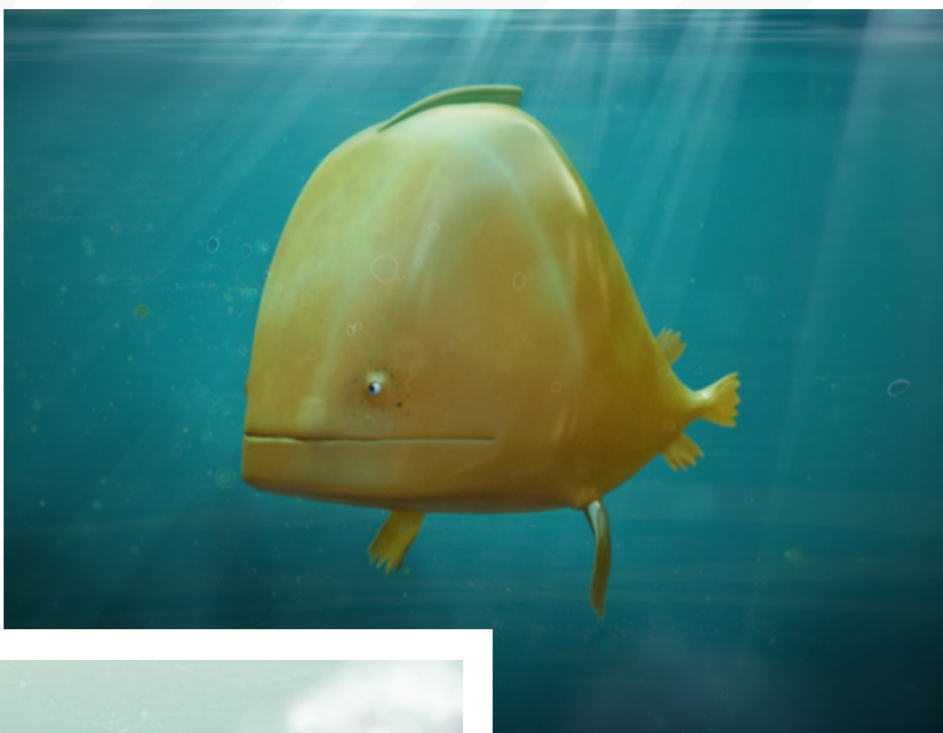
bursts',” says Ryan Honey, Creative Director at Buck. “They wanted 10 to 15 second, weird, unexpected stories to grab viewers’ attention between content, and remind them what channel they are watching. We threw this open to our entire team and gave them a chance to be really creative. We have incredible talent at Buck, and we wanted to leverage everybody’s skills and come up with something unique and fresh. Out of the 14 concepts we submitted, ‘Food Chain’ was the most abstract.”

Opening with an oddly cute little Dumbo squid swishing around in sunlit water, and next to a



Channel Five logo, the "Food Chain" camera suddenly widens to reveal a yellow fish with green fins and long sharp teeth. No sooner has the yellow fish inhaled the Dumbo squid than he himself is sucked up in the vertical journey of a bigger fish before it breaks the surface with a splash. Before he can enjoy his meal, however, the fish lands on the beached pink tongue of a four footed toaster, which is quickly entrapped within the plaid and buttoned tongue of a hungry armchair, which is soon chewing with evident satisfaction.

"We pride ourselves on attention to detail," says Honey. "While this was a fun and cute spot, we also wanted to give it a highly polished, surreal



look with a little edge. This was really driven by our 3D team, who used their photorealism skills to come up with an almost unsettling look for our characters."

And these characters are all Buck. Although Honey and his team referenced all manner of ocean life for inspiration, the only fish that is "real" is the Dumbo squid which, to be honest, looks kind of like a cartoon even in real life. Associate Creative Director Jeremy Sahlman opted for a hybrid "claymation" style that would add a whimsical feel without making the spot feel like a cartoon. The texture and lighting team then went about creating the surreal scenario and surrealistic look. Composer Jon Gorman added light rays, plankton, and tiny bits of water distortion to further distinguish the scene. "Everybody enjoyed the little details," says Honey. "The blobby, reflective water; the squirming feet on the toaster; the precise reflection of the extending tongue in the toaster before it's devoured; we had a lot of fun making it. Everybody got a chance to show their skills."

## ABOUT BUCK

Specialising in design-driven creative, Buck's directors and artists use animation, visual



effects and live action to collaborate with clients, from concept to delivery, producing work that is visceral, innovative, and diverse.

From offices in New York and Los Angeles, Buck works with a broad range of clients in the advertising, broadcast, retail and entertainment industries.

For more information please visit: <http://www.buck.tv>.

## FOOD CHAIN CREDITS: BUCK

**Creative Director:** Ryan Honey

**Executive Producer:** Maurie Enochson

**Senior Producer:** Nick Terzich

**Associate Creative Director:** Jeremy Sahlman

**VFX Supervisor:** Doug Wilkinson

**Art Director:** Chris Lee

**3D Animation:** Matt Everton

**3D Artists:** John Niehuss, Thomas Madreiter, Randa Mohtady, Csaba Letay, Michael Colarik, Kyle Raffile, Ivan Sokol

**Compositor:** Jon Gorman

**Audio:** Cypher Audio

**Software:** Maya, After Effects



## DIXONBAXI

**Creative Director:** Simon Dixon

**Creative Director:** Aporva Baxi

**Executive Producer:** Gareth Evans

## FIVE

**Head of Creative Services:** Nol Davis

## ERIC EDDY

For more information please visit:

<http://buck.tv/work/food-chain>

Or contact:

[eric@doubleecomms.com](mailto:eric@doubleecomms.com)

Article courtesy: Eric Eddy

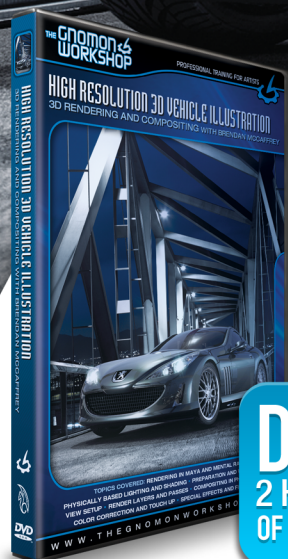




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# THE GALLERY

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Neil Maccormack

Mahmoud Keshta

Luis Arizaga

Tomáš "Temüjin" Müller

Vadim Valiullin

Filippo Soldateschi

Dennis A. Hoppe

Michael Grote







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## THE GUARDS

Alexey Kashpersky (RIDDICK)

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# THE PORTRAIT OF A BISHOP

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# RISING

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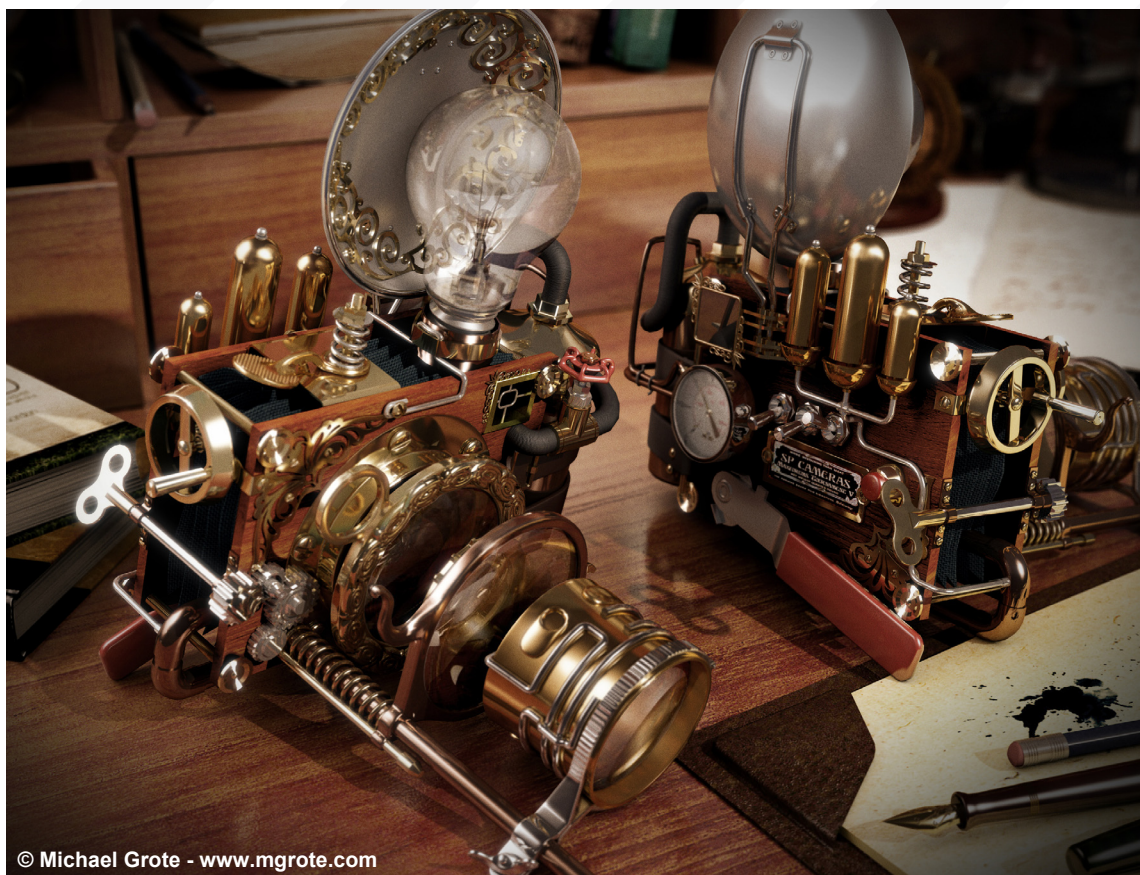


## STEAMPUNK CAMERA

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## FUTURISTIC GIRL

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# ONLY A WAR MAKES REAL MONSTERS

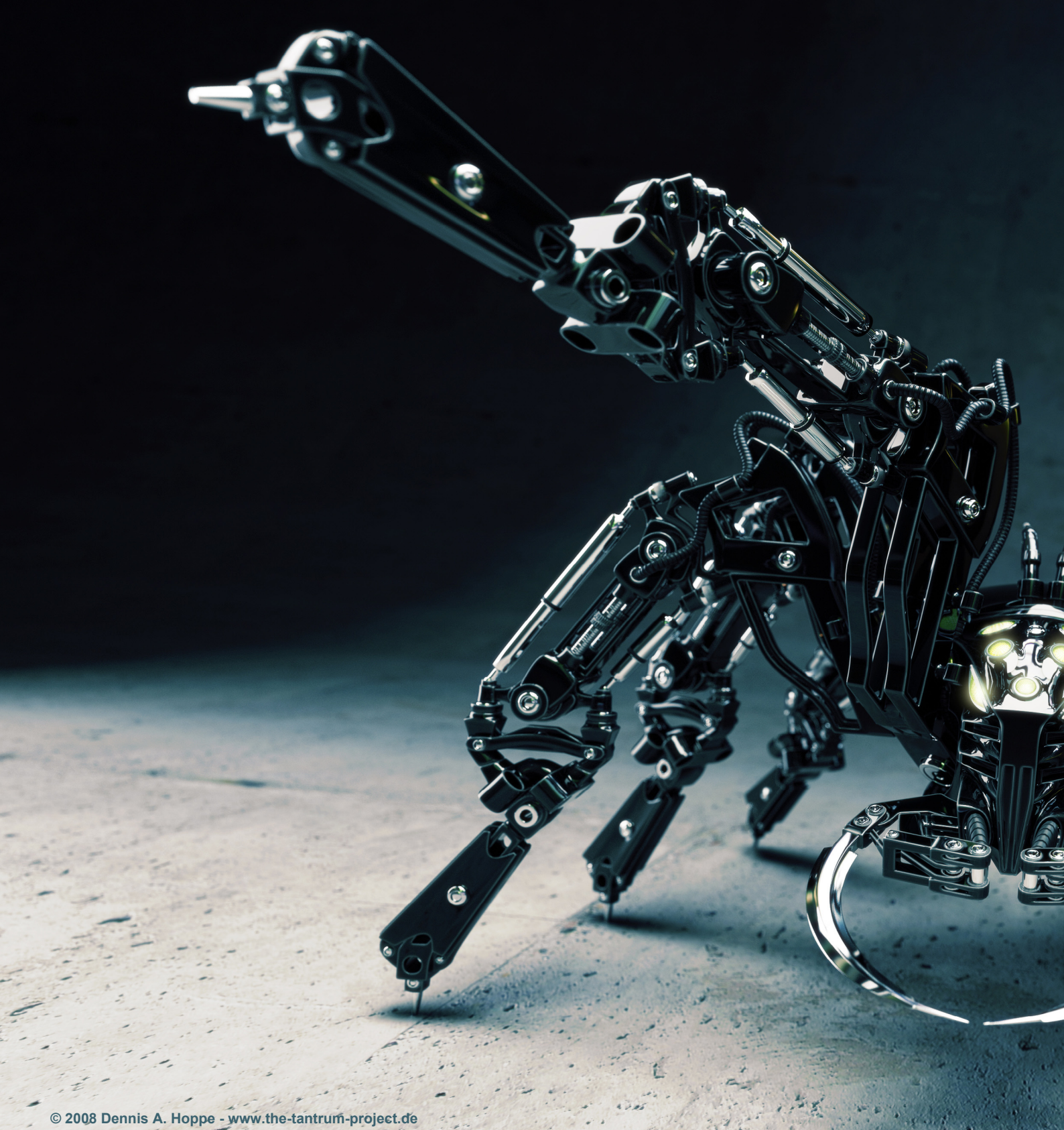
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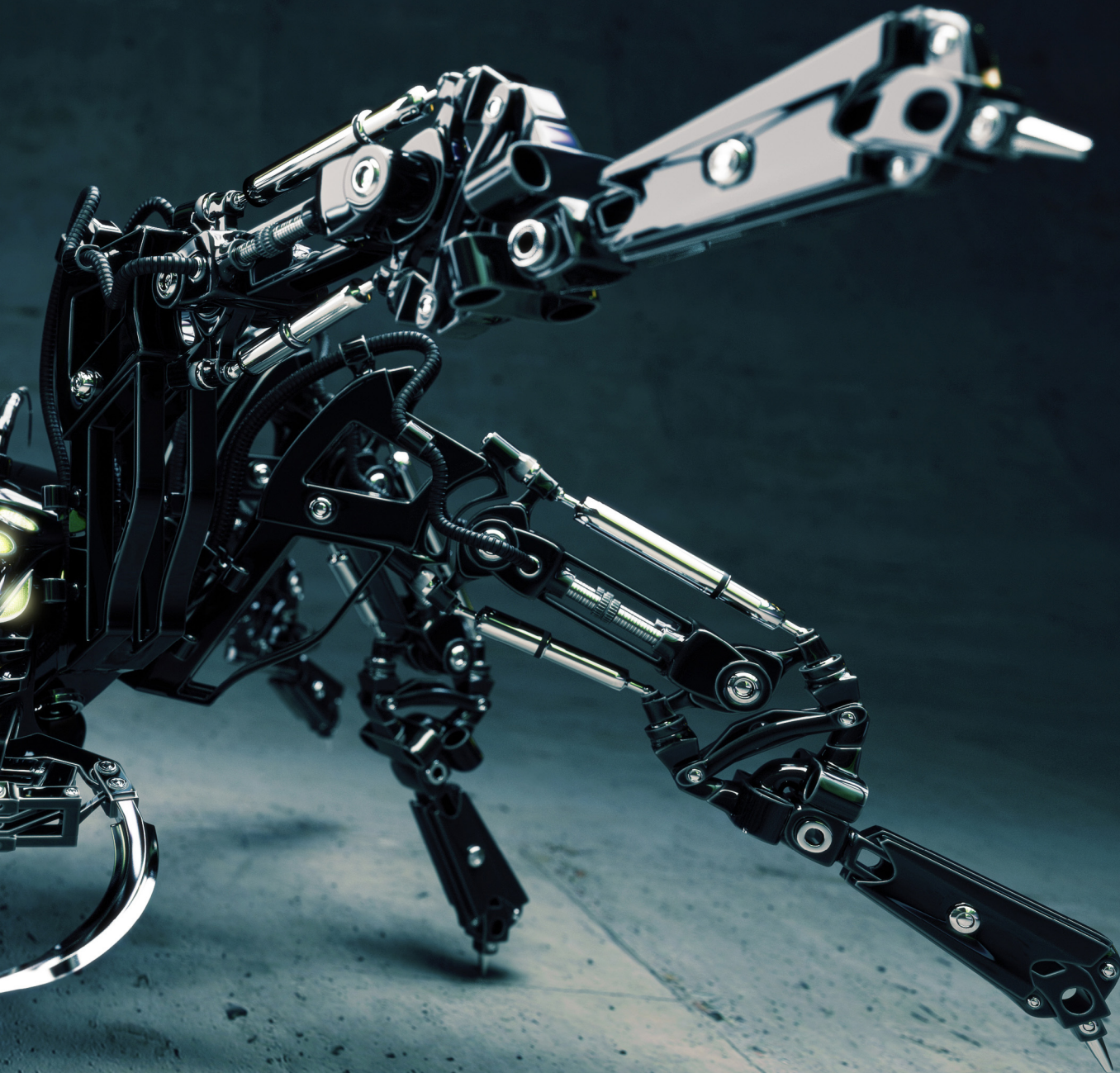


# SPIDER ROBOT

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## LECHUCK THE ZOMBIE PIRATE

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## FUTURE MARINA

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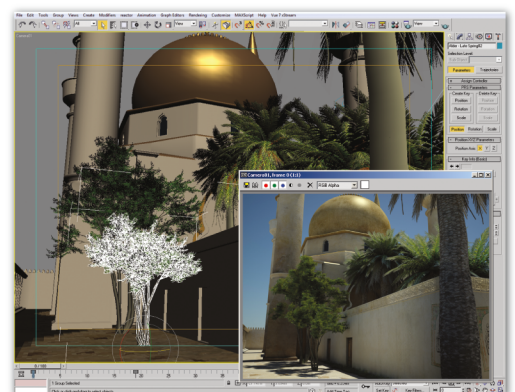
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# CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER

This series will run over the next six months and will endeavour to give you an insight into how a fully realised 3D scene may be arrived at from beginning to end. The tutorials will attempt to address the key issues and techniques appropriate in achieving this, from concept sketches through to building the 3D scene, mapping and unwrapping, texturing and eventually to lighting and rendering, culminating in a final render. The emphasis over the course of the series will be on the texturing, which will be covered in two of the six instalments, and principally the aging and wear of materials.

3DSMAX

3DSMax Version  
Page 99

CINEMA 4D

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LIGHTWAVE

Lightwave Version  
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MAYA

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SOFTIMAGE XSI

Softimage XSi Version  
Page 127

This Month :

## PART 5: TEXTURING PRINCIPLES

This chapter will focus on the mapping and unwrapping of your scene





"I ALSO RECOMMEND TRYING OUT DIFFERENT MATERIALS ON YOUR MODEL AS YOU WORK, TO GIVE YOURSELF A FRESH VIEW OF THE DESIGN AND TO LOOK FOR ANY FLAWS IN THE SCULPT"

# FANTASY DINOSAUR

Welcome to the brand new Speed Sculpting section of 3DCreative magazine. Each month we will give two talented ZBrush sculptors a brief and a base mesh from which they are to interpret and speedily sculpt a model within a suggested time. Here we will show the stages of creation of their "speed sculpts" in the form of mini tutorials. You will often find free movies to accompany these tutorials, and we hope that this new series will be successful and thrive for many months to come!

This month our two skilled speed sculptors are **Diego Maia** and **Walfredo Monteiro**, who are tackling the brief:

## Four-Legged Fantasy Dinosaur

If you'd like to follow along with these tutorials, we have provided the same free base mesh for you that we also gave to these two artists for their own speed sculpts. Download your own base mesh from the **Free Resources** logo below and get sculpting! Enjoy!



# SPEED

# SCULPTING





# DIEGO MALA

## CREATED IN:

ZBrush

## TIME LIMIT:

6 hours

To begin, I made a quick sketch in Photoshop to help me to find a cool design. I didn't want to make an ordinary dinosaur, so I tried some different proportions and played around with the design of the elements a little (**Fig.01**).

Trying to make some studies before starting your modelling work will always help a lot. Avoid working without references; for this piece I used plenty of pictures of lizards and dinosaurs, in order to create a realistic character.

Here is my base mesh from the front view (**Fig.02**) and in profile (**Fig.03**).



Fig.01

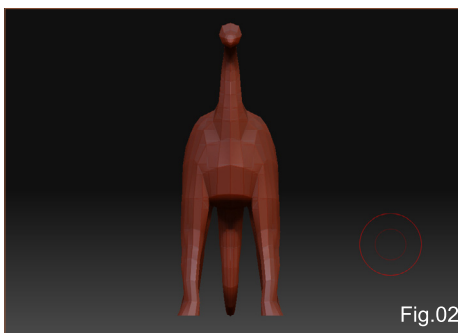


Fig.02



Fig.03

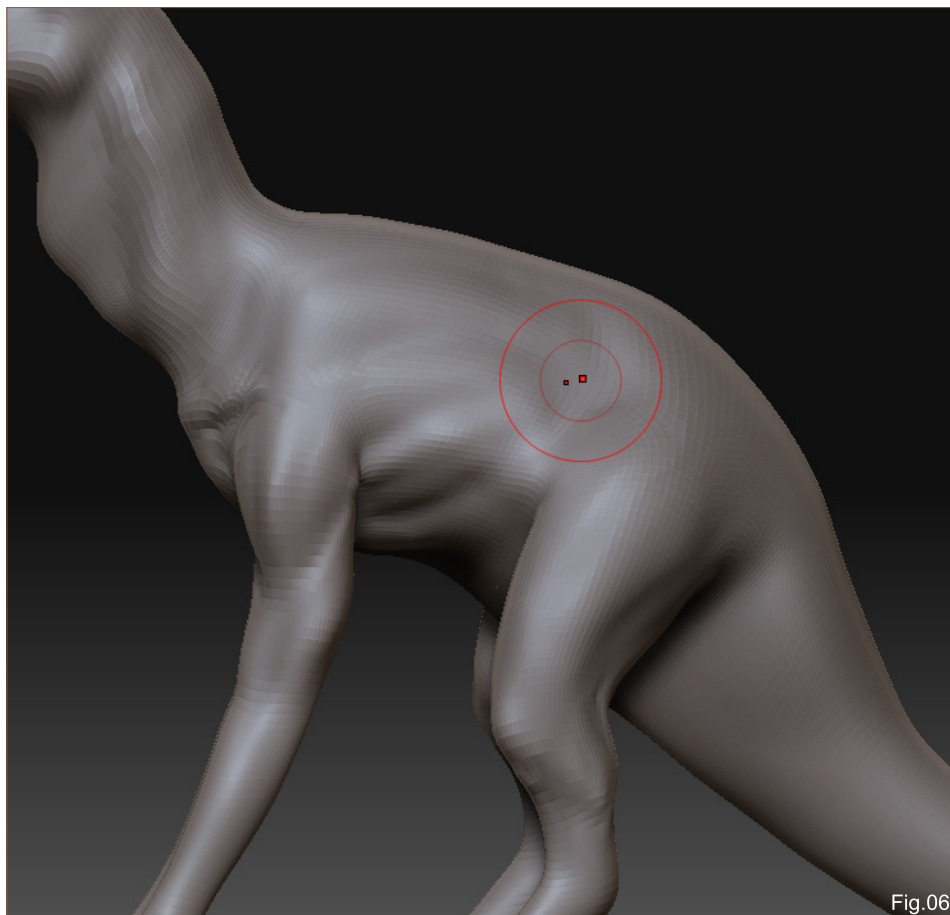


Fig.06

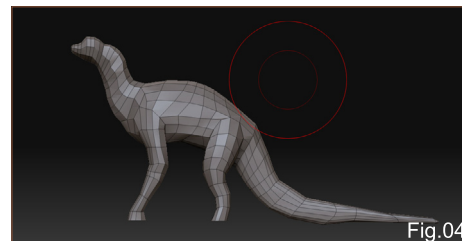


Fig.04



Fig.05

I chose a good material and found the proportions for the model using the Move tool (**Fig.04**). I always advise setting some shortcuts for certain tools that you use frequently whilst you sculpt in ZBrush, such as for the Standard, Move, Smooth, Flatten, Pinch (etc.) tools. You simply have to click on the tool whilst holding Ctrl and pressing a number on your keyboard.



After getting close to the desired proportions for my character, I increased the level of subdivision and started finding the generic volumes using the Move and Standard tools. It's not necessary to worry about the small details at this stage (**Fig.05 & Fig.06**).

You can block out the forms of each part and hide the rest of the body. Here, I was just using the Standard brush for this part of the process (**Fig.07 – Fig.09**).

Don't forget to use references as you work. In my case, I used an animal anatomy book and some snapshots from *Jurassic Park* (**Fig.10**). This just simply helps you to create characters that look "real", so try to understand how anatomy works and it will surely help you with your modelling work and character studies.

As far as my base mesh went, I wasn't given any fingers or toes, so to create these I went ahead and used the Snakehook tool to pull them out from the base (**Fig.11 – Fig.13**). I used the same technique for the horns, as well. Try not to use this tool if you're creating a character for animation though; just use it for quick sketches and sculptures like this.

At this stage, I was ready to start adding some skin folds and more detail to the body, as you

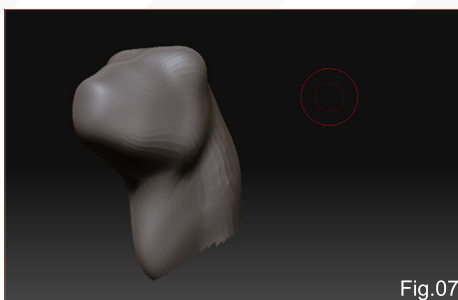


Fig.07

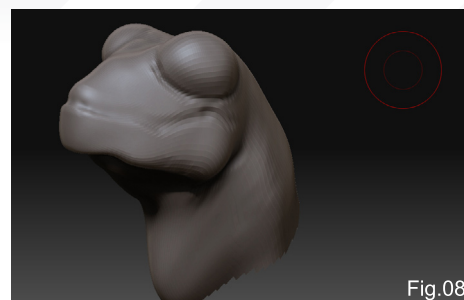


Fig.08

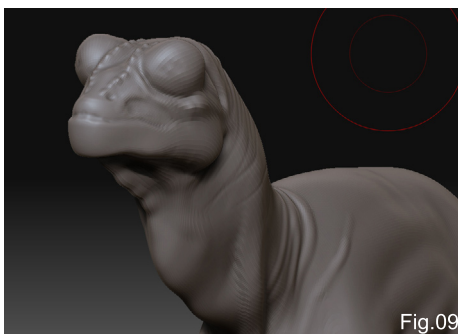


Fig.09



Fig.10



Fig.11



Fig.12

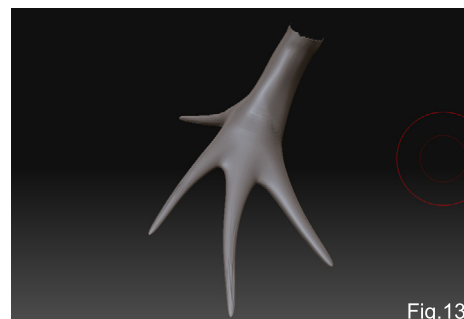


Fig.13

can see from **Fig.14**, using the same tools as previously mentioned.

Once satisfied, I could then start to go in and really refine the character by adding extra detail. For the head, I used the Snakehook tool again to create small bumps down the centre of the



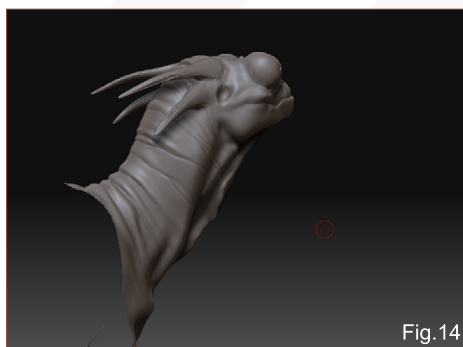


Fig. 14

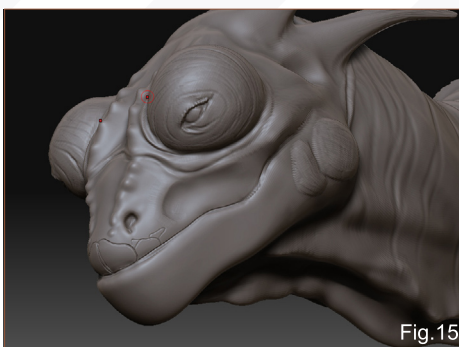


Fig. 15

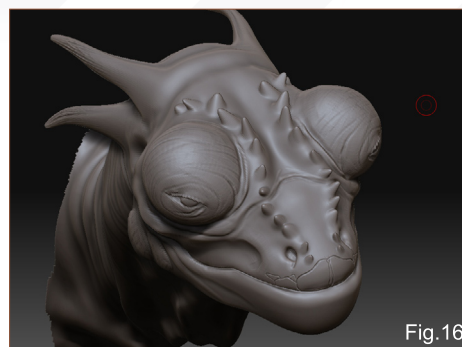


Fig. 16

face, and the Standard tool was used to draw the larger scale ones (Fig. 15 – Fig. 17).

Here, I started to break the symmetry up in certain areas, adding to the believability of the character (Fig. 18).

I also recommend trying out different materials on your model as you work, to give yourself a fresh view of the design and to look for any flaws in the sculpt (Fig. 19).

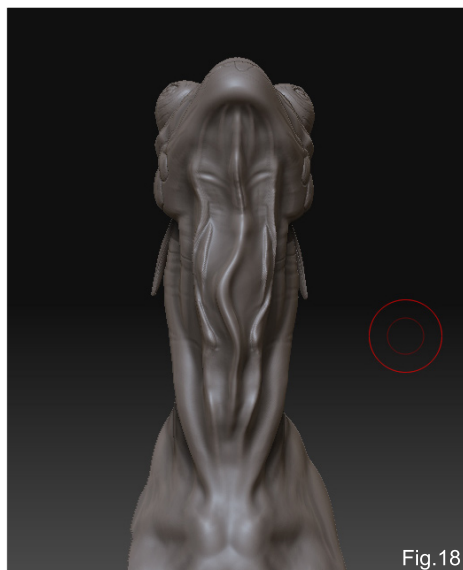


Fig. 18



Fig. 17



Fig. 21



Fig. 19



Fig. 20

At this stage of development, I was defining each and every part of the model, as after this process came the sculpting of the final details (Fig. 20 – Fig. 23).

To create the skin texture on the dinosaur, I used the Standard brush to sculpt the desired

surface (Fig. 24). A good tip here would be to use the Lazy Mouse feature to assist you with your detailing – simply press L on your keyboard to turn the function on.

I wanted to add some scales at this point, and I did so using the Clay Tubes tool (Fig. 25).





Fig.22



Fig.23

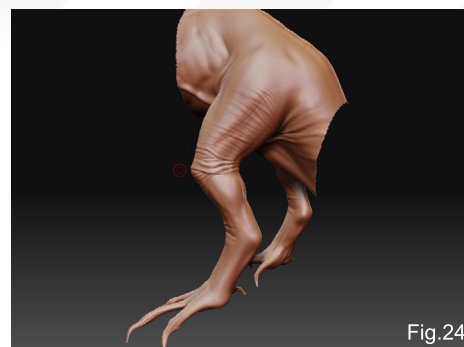


Fig.24



Fig.25

After sculpting as much details as I could, within the six hour time frame allotted for this "speed sculpt", I imported some alphas and applied them to the model, using the Drag Stroke tool (Fig.26). You can of course create your own alphas in Photoshop, using some photographs of animals.

And here, I finally declared the end of the sculpting process, but then swiftly decided that I wanted to make the dinosaur look a little more lizard like, and so I added some spiky scales along his spine to create the desired effect (Fig.27).

And so, here is the finished dinosaur character (Fig.28 – Fig.31); I hope you like it and that you've found something useful to take away from this tutorial. Thanks for reading.



Fig.26



Fig.27

## DIEGO MAIA

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Or contact:

[maia3d@gmail.com](mailto:maia3d@gmail.com)





Fig.28



Fig.29



Fig.30



Fig.31





# WALFRIDO MONTEIRO

Here is the base mesh that was supplied for this challenge – which was quite far from what I had in mind for my model (**Fig.01 – Fig.03**).

Before starting to sculpt, I made a quick sketch in order to find an interesting design. I find that making a sketch before starting the work helps to optimise my time; even if you spend a little time working on a sketch, you'll be sure to save a lot of time on the ZBrush model later on.

Using the Transpose tool, I make some major changes to the base mesh proportions, tweaking



Fig.01



Fig.02

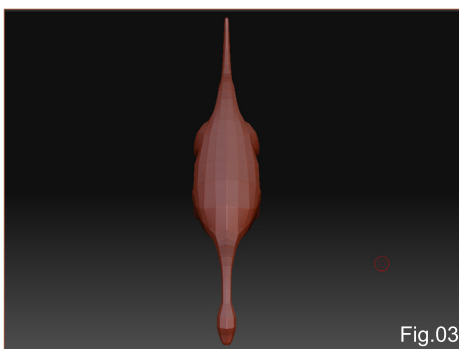


Fig.03

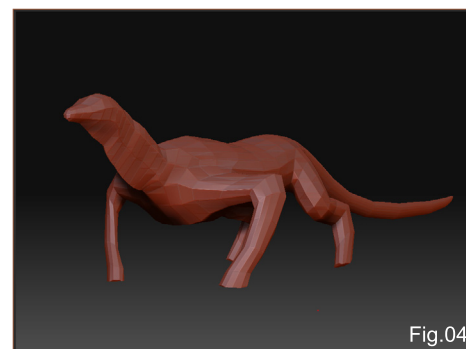


Fig.04



Fig.05



Fig.06

it to turn it into something much closer to my own concept (**Fig.04 & Fig.05**).

Here I start to use the Standard and Inflat brushes to work some of the volumes, always trying to keep an organised base mesh. If you keep a nice flow of edges you'll find it much easier to add the details later on (**Fig.06 & Fig.07**).

To be able to extrude the fingers with the SnakeHook brush, I add some loops onto the base mesh using the Edge Loop button in the Geometry tab (**Fig.08 & Fig.09**).

Trying to sculpt here I find the base mesh too low in its subdivision level (**Fig.10**). I therefore find the best solution is to divide the model one



Fig.07



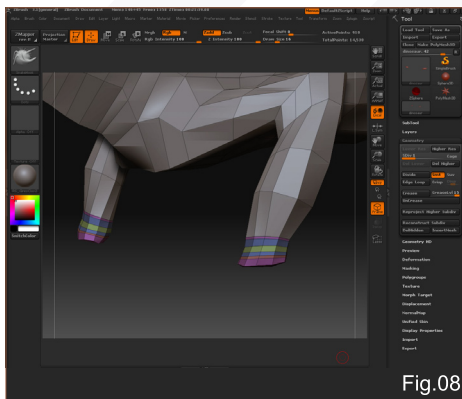


Fig.08

more time – giving me three divisions. This will enable me to sculpt the major volumes now (Fig.11 & Fig.12).

At this stage I think it will be easier to work out the entire concept after working on the head. As I made a sketch to help me with the concept, it was easy to block out the head, but right now I'm still not sure about what kind of detail I want to add to his head (Fig.13 & Fig.14).

I simply add some folds of skin onto the neck, to give more weight to the character (Fig.15).

Here I'm checking the character in the perspective view; I find it better to see the entire model this way. By doing this, I can spot a

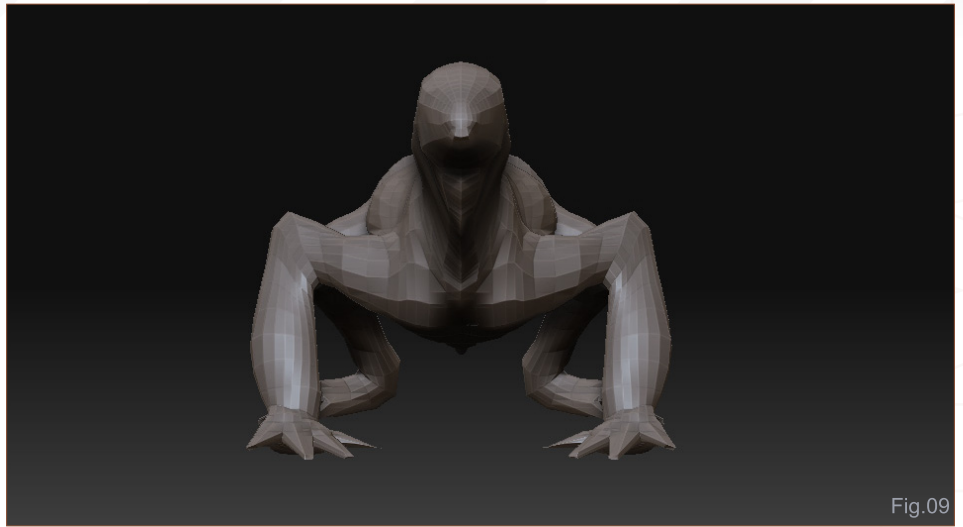


Fig.09



Fig.10

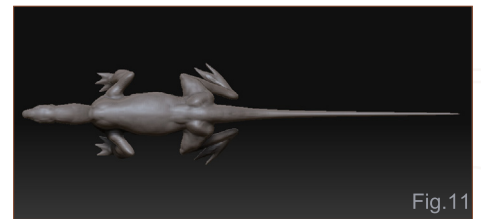


Fig.11

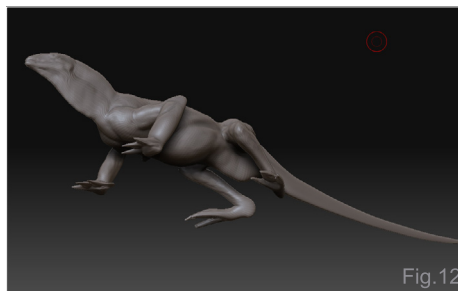


Fig.12

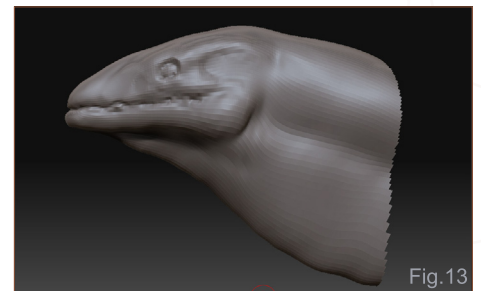


Fig.13

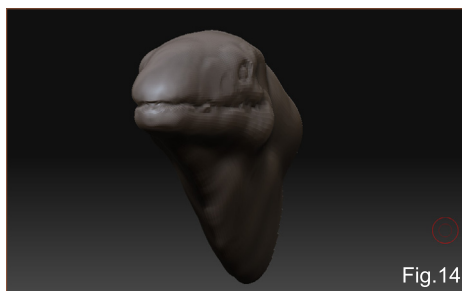


Fig.14



Fig.15



Fig.16

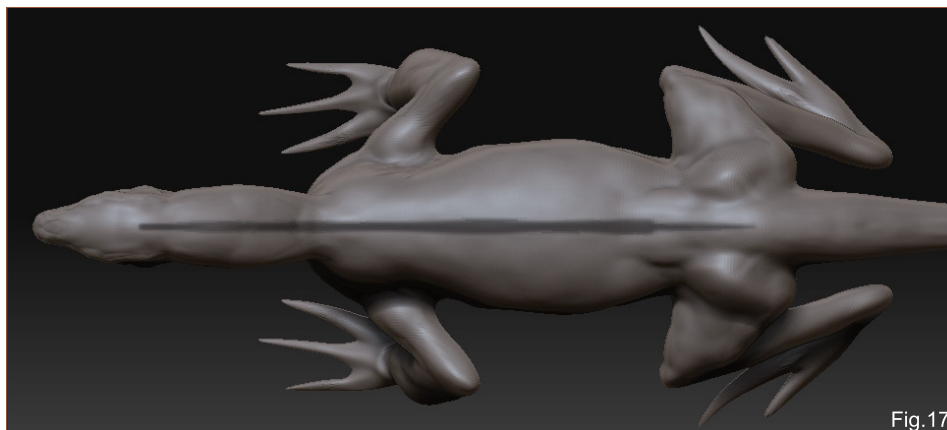


Fig.17

problem with the hands and therefore use the Transpose tool to fix that (Fig.16).

Now I'm using the Lazy Mouse tool to mask what is going to be the spine: just invert the selection and use the Move brush on the side view to extrude the spine (Fig.17 – Fig.19).

It's at this stage that I start to worry about the anatomy; I don't have any references to check my concept against, so I'm literally just adapting





Fig.18

a human arm to my lizard-like creature here (Fig.21). If this wasn't a speed sculpt, please note that I would usually get some references to help out at this stage.

I'm looking for good proportions here, and I can then transfer the result to the other side of the model using the Smart ReSym in the Deformation tab of the Tool menu (Fig.22 & Fig.23).

After finding the proportions I want for the entire model, I need to divide again – it's on its fifth



Fig.19



Fig.20



Fig.21



Fig.22

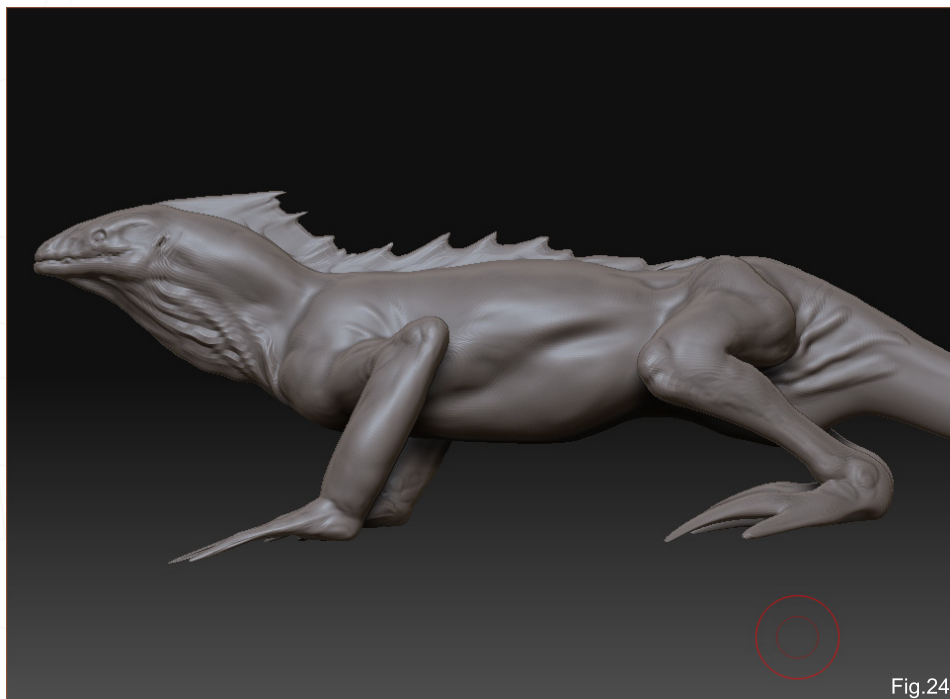


Fig.24

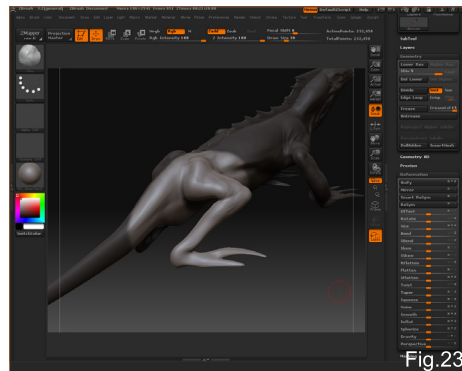


Fig.23

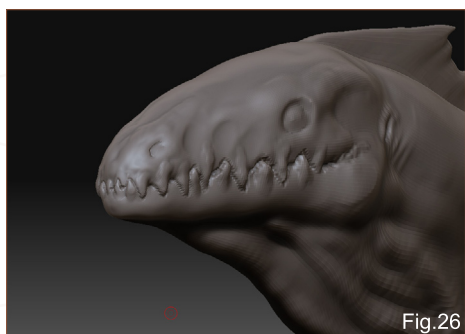


Fig.26

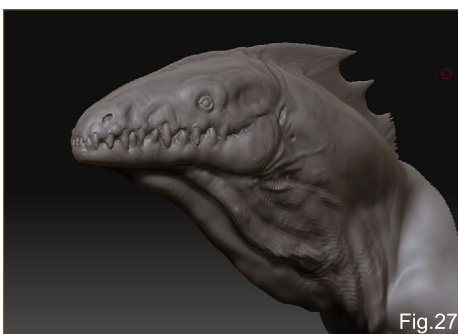


Fig.27

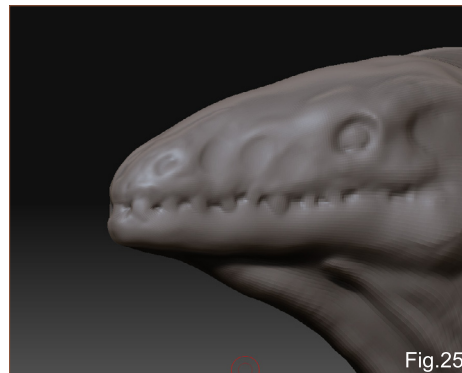


Fig.25

division now. Now I go back to the head to find the mood of the dinosaur. I try out some external teeth to make him look carnivorous, using the Clay brush almost all of the time to sculpt – this way I can achieve some good result and make the bones and all of those irregularities that you should find in organic models (Fig.25 – Fig.27).



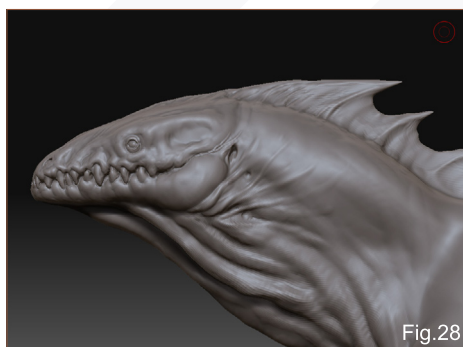


Fig.28

Here I divide the model once again and complete the sculpting of the head (**Fig.28**).

It's now time to try sorting out some of the anatomical problems I've noticed, and it's also a good time to work on the feet. I also find adding some extra folds in the skin helps to improve things at this stage, making the model look more organic (**Fig.29 – Fig.31**).



Fig.29

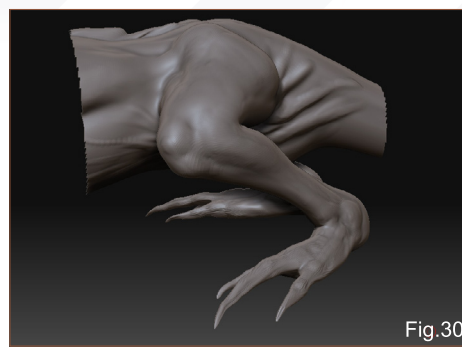


Fig.30



Fig.31



Fig.32



Fig.33



Fig.34

I'm pretty happy with the result now. I could choose to finish off the model by rebuilding the topology, but I'm not going to do that as I have just one hour of sculpting left at this stage (**Fig.32 & Fig.33**).

I add some skin interaction with the spine now, to achieve a more natural look at the base of the spine (**Fig.34**).

Here I simply use some alphas for the skin texture of my lizard-like creature. Using an alpha with smooth borders achieves a good result – and we're done (**Fig.35**). I hope you like the final result, thanks for reading.



Fig.35

## WALFRIDO MONTEIRO

For more from this artist visit:

<http://walfrido3d.blogspot.com/>

Or contact:

[walfrido.monteiro@gmail.com](mailto:walfrido.monteiro@gmail.com)



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# Extreme Piercings & Tattoos Character Creation ZBrush

Welcome to the new ZBrush Character Creation tutorial series. Each month, Rafael Ghencev will take us step-by-step through the transformation of a clean, generic head base mesh into a character type of 3DCreative's choice! We thought that topics such as a wrinkled, gaunt, old man, a steroid-pumped guy with popping veins, an extreme tattooed and pierced dude, and even some real extreme cases of personality disorders in the form of a vampire and a werewolf, would be fantastic for detailed sculpting work! On top of all these, Rafael thought it would be cool to sculpt and texture Frankenstein, and we agreed, so we've even thrown that one into the line-up for you as well. So stay-tuned over the next nine months to see Rafael at work and to learn a thing or two about detailed sculpting in ZBrush for characters. This fourth tutorial covers a guy with extreme piercings and tattoos.

Enjoy!



Download your free  
base mesh here!

SEPTEMBER 2008  
Part 1: Old / Gaunt

OCTOBER 2008  
Part 2: Obese

NOVEMBER 2008  
Part 3: Steroid-Pumped Guy

DECEMBER 2008  
Part 4: Extreme Piercings & Tattoos

JANUARY 2009  
Part 5: Beaten-Up

FEBRUARY 2009  
Part 6: Zombie

MARCH 2009  
Part 7: Vampire

APRIL 2009  
Part 8: Werewolf

MAY 2009  
Part 9: Frankenstein



# ZBrush Character Creation Extreme Piercings & Tattoos

## CREATED IN:

ZBrush

## CONCEPT

Hello, I'm back with the next part of this tutorial series: this month I'm working on an extreme pierced and tattooed guy and I've decided to go for a punk. I've also chosen not to do an initial sketch this month; I'm just going to use ZBrush to get a feel for my sculpt and find my character. This method is good for having fun in ZBrush, but if you're creating a character for a job then it's much better to make a drawing beforehand, and it will also save you some time. To help me with inspiration for this project, I first of all searched online for some interested pictures



Fig.01



Fig.02

of punk characters, and tattooed and pierced people, to give me some ideas for my own character design.

## FINDING THE SHAPE

After searching for and gathering reference images, I start by finding the initial shape in ZBrush, using the Move brush. I play with this tool and search for a good shape for my

character (**Fig.01**). I want to create a fairly thin character, but at the same time I want to search for a character with a strong spirit.

After finding a good shape, I divide the model and start to refine the basic shape (**Fig.02**). I continue using the Move brush to handle some big areas; the Standard brush is also used to create some volume, like the eyebrows and the shape of the nose. For the zygomatic (cheek) bone and other small volumes, I use the Clay brush.

Like always, it's very important to spend plenty of time on this part of the process, because we're forming the essential structure of the character. Once established, I can then spend a little more time defining the shape of the nose, etc.

I'm working here with the Clay brush to mark some bones under the skin and to give him a more natural shape, after working on the mouth and eyes, marking the lips and the bone structure around the eyes (**Fig.03**). I'm still just focusing on the basic shape at this stage.

## INDIVIDUAL SHAPES

When the basic shape has been found, I can then start to refine the individual shapes. Here I can spend more time on individual areas, hiding



Fig.03



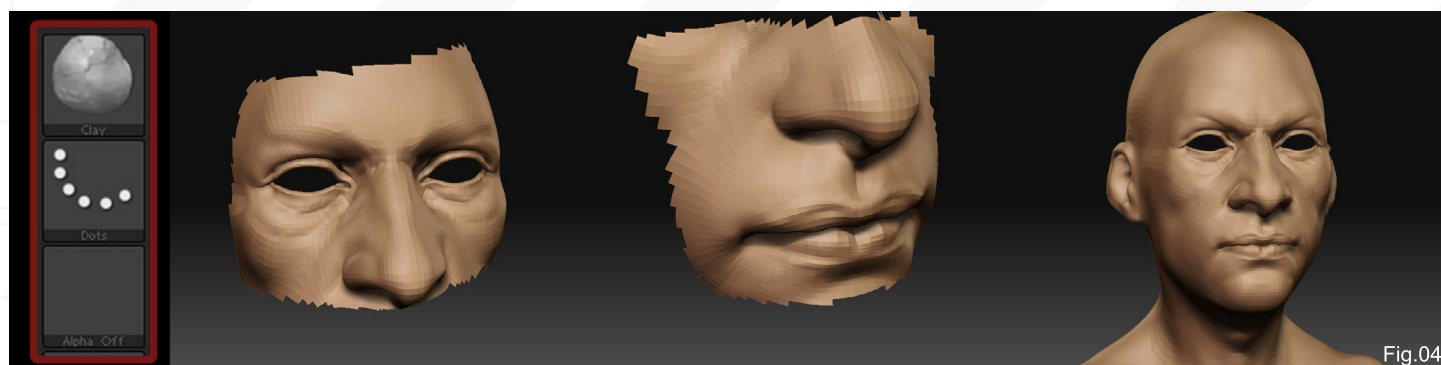


Fig.04

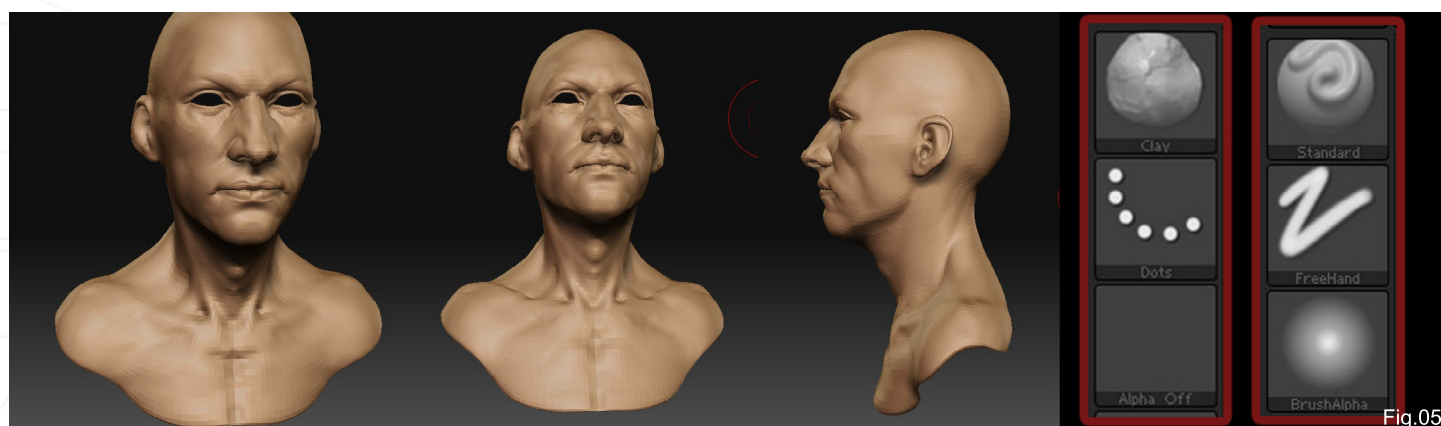


Fig.05

some parts as necessary to focus my attention on a specific area. Starting with the Clay brush around the eyes, I start to work on the muscles, and in the mouth area I define the lips and their form some more (Fig.04).

## WORKING MORE ON THE SHAPE

Here we can start to put the bones and muscles in the chest area and on the shoulders. He is a thin man, so I can see the muscles and bones in his physique. So I start by using the Clay brush to put the ribs and chest muscles in place and then move on to refine the neck's shape and muscles. I then move back to the face and, picking the Standard brush with Alpha 38, start to mark some cavities in the eyebrows. With the Clay brush I keep refining the shape of the face; here I add some marks to insinuate the muscles under the skin (Fig.05).

When all of this is finished, I can start to work on the ears. I choose the Clay brush to block the shape of the ear in, and then with the Standard brush I work on the cavities and add some more volume to the ear (Fig.06).

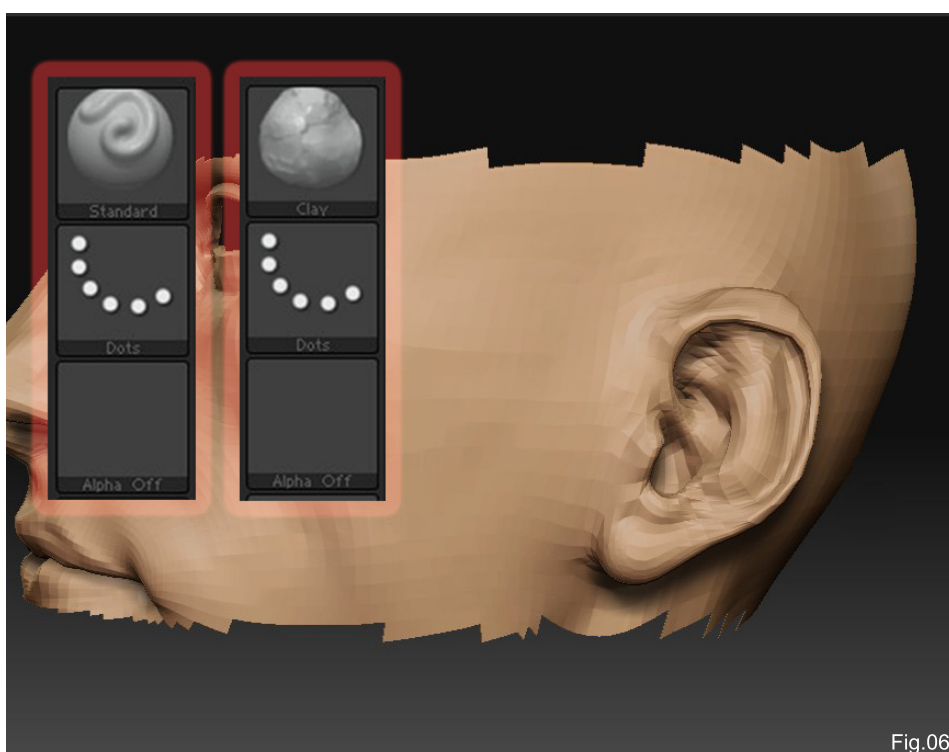


Fig.06



Fig.07



## REFINING

We can start to refine the nose now, creating a more flattened area. I use the Clay brush, only changing the ZAdd for ZSub to subtract information on the mesh. I then work more around the eyes, using the Standard brush to do some of the cavities, giving expression to his eyes. In the mouth area, I use the Standard brush with a low radius and low intensity to create some wrinkles/creases (**Fig.07**).

I continue working on nuances in his face, such as wrinkles and expression marks, using the Clay brush (**Fig.08**). In his upper body, I refine the muscles and bone forms, and in his neck I add some large wrinkles/crease lines, using the Clay brush (**Fig.09**).

## POSING & EXPRESSION

Here, before I detail all of my character, I decide to do his pose and remove his symmetry. So, using the Transpose tool, I try to find a suitable pose for my character. I prefer doing this at a low level of subdivision, because it gives me more control over my model. Remember also to create a layer for the pose – this is important because we can do the texturing without the pose, as it's easier to paint the textures that way.

When the pose is good, I use the Move brush to remove his symmetry and add expression to him (**Fig.10**).



Fig.08

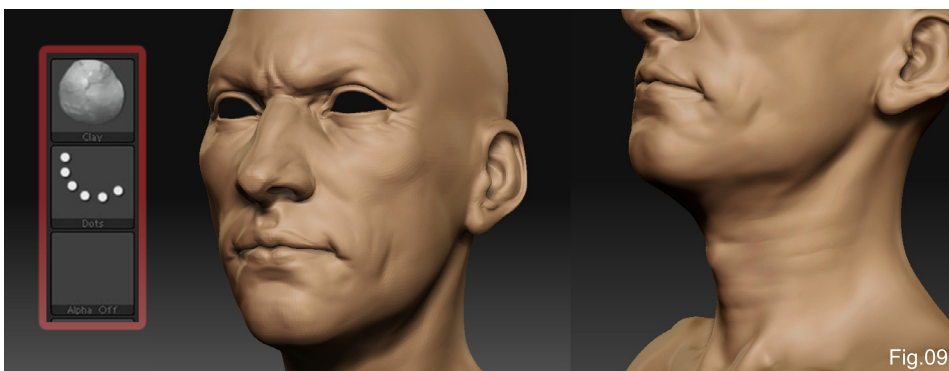


Fig.09

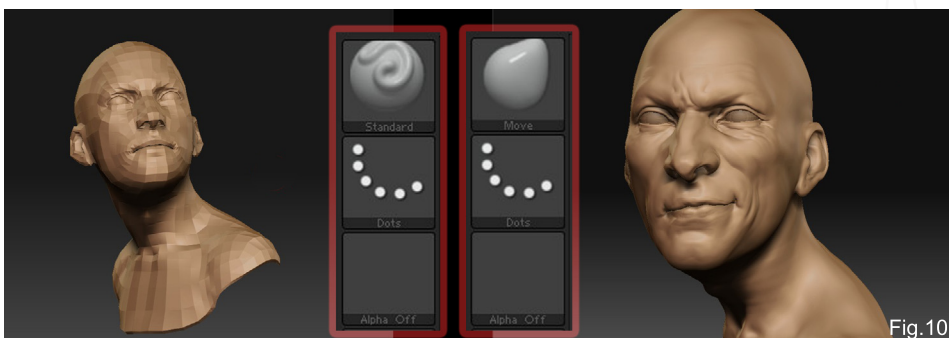


Fig.10



Fig.11



Fig.12

## PIERCINGS

Now I'm going to put the piercings into his skin, so I pick "rings3D" from the tool palette and import them like SubTools into my scene, fitting them to my character's face where I think they'll look most effective (**Fig.11**).

I also pick some spheres and add them into my scene as well, to simulate stud piercings (**Fig.12**). To do the stretched earlobes, I pick another ring3d and make some modifications to it, fitting it into the ear of my character. To make the hole in the stretched earlobes, I just paint a mask in the area I want to make a hole in, and hide it. It is only a fake hole, but it works well in this case (**Fig.13 & Fig.14**).



I now make some modifications in the skin around the piercings, to give a more natural look (Fig.15).

## HAIR

For the hair I decide to do a Mohican, but because I don't want to create new geometry for this, I'm going to sculpt it. To do this, it's very important to visualise the hair before starting the modelling process. So I start off by blocking the flow of the hair, using the Standard brush with a low value. It's very important to seek good movement in the hair – something organic – so always search for references.

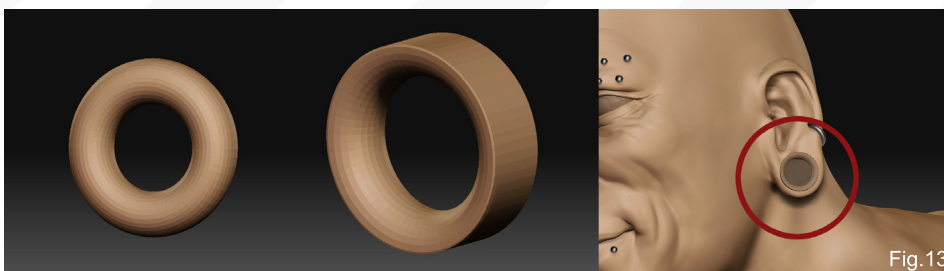


Fig.13

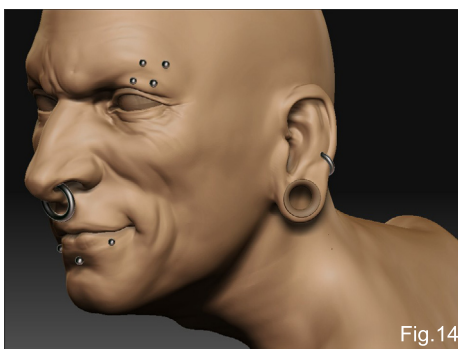


Fig.14



Fig.15

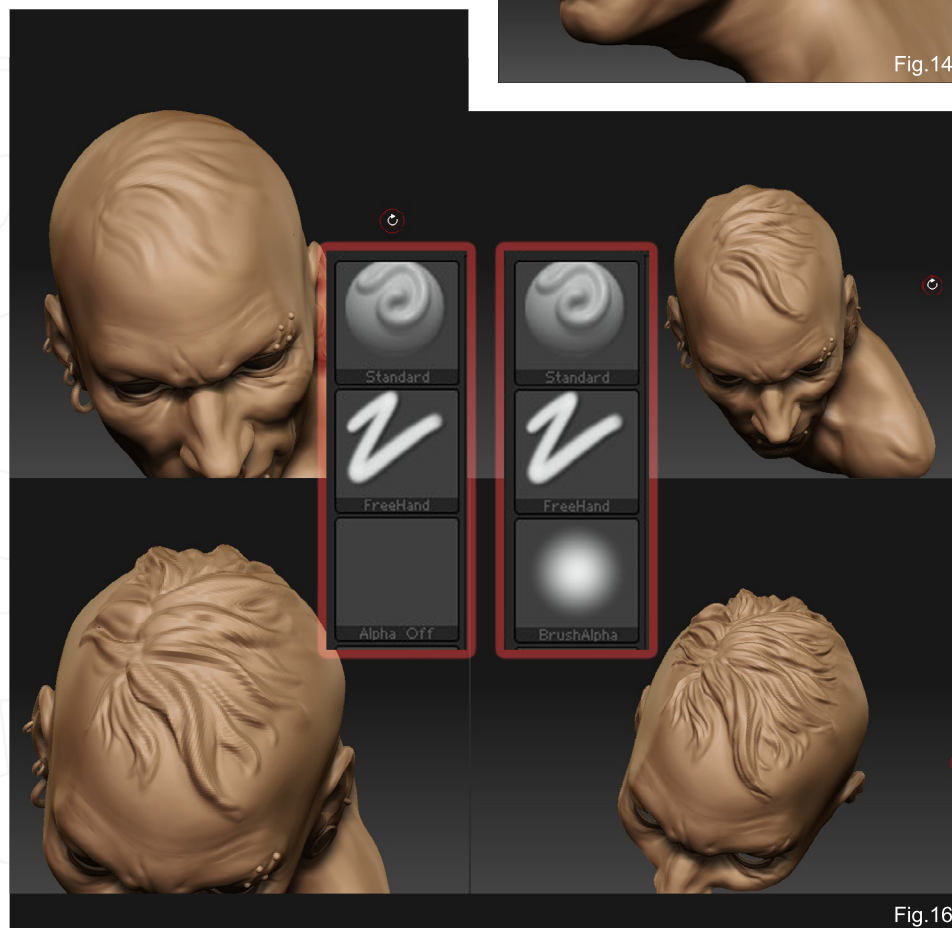


Fig.16

After the blocking process, I can start to refine the hair. Using the same brush, I just change the alpha for a very smooth one, and start to create more volume and a more wiry hair type (Fig.16).

## FINAL DETAILS

To finish the model, I select the Clay brush with a low radius and start to create some imperfections in the skin, one by one. I then change the stroke to spray and select a small alpha, like 44 for example, and paint some holes in the model to simulate some large pores in the area where his facial hair would grow. I then select the Standard brush, with Alpha 38, and start painting some little wrinkles in the mouth area (Fig.17).

Here is the final model (Model.01).

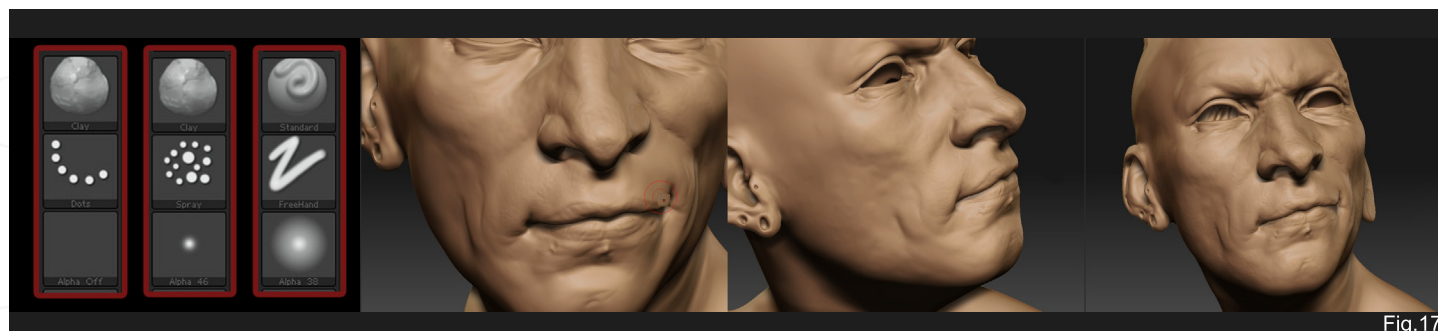


Fig.17













Fig.18

## TEXTURING

To start the texturing process, I turn off the layer with the pose for my model and go back to its original state. I select a white shader and turn off the perspective to avoid any distortions in the model. I then create a new texture in the texture palette.

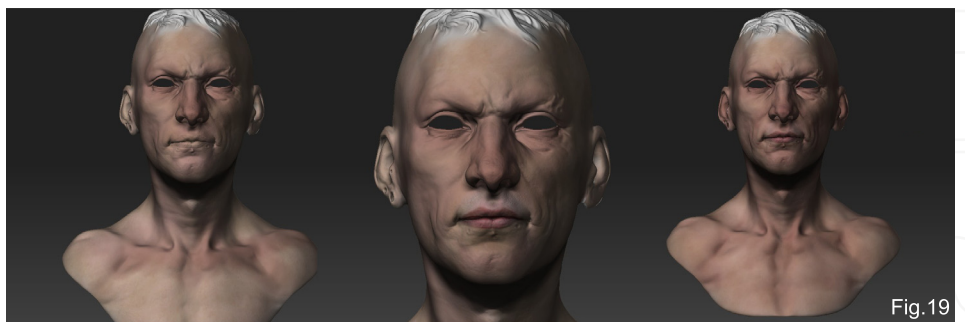


Fig.19



Fig.20

Once more, I want to use the Projection Master to project images with planes. So I press G to start the projection master, select the plane3D, pick a skin photograph and then select an alpha with smooth borders. I then start to block the basic skin colour in, projecting many skin pictures onto the model to achieve the desired effect (Fig.18).

When my base colour is looking good, I can project the lips and turn on the Edit mode to adjust the lip picture onto my model, just like using the Liquify tool in Photoshop. I then start to apply different skin tones onto the model, to give a more realistic look, remembering that there is blood running below the skin. I only paint the cavities with a red colour – this is a very useful technique to help me in faking a Sub Surface Scattering effect in the final render (Fig.19).

With the overall colour looking good, I search for some tattoos to project onto my model. After finding some cool pictures, I open them up in Photoshop and cut out the silhouettes to create alphas. In ZBrush, I select a plane3D; in the texture I select the tattoo photo and in the alpha I select the alpha I just created in Photoshop. Then it's just a matter of projecting the tattoo onto the model and editing where necessary (Fig.20).

Here I create some freckles and moles with a simple brush, using the drag option on the stroke (Fig.21).

To paint the hair, I change my texture to poly paint. For this I certify having a large amount of polygons – this is important because the colour



information will be transferred to the polys. I then open the palette, go to Tool > Texture, and select Colourise. I press Txr>Col (texture to colour). Now my polys have the same information that I had before in my texture map.

I can start to paint the hair now using the Standard brush with a brow colour – this is the base colour. I then select a dark brow colour and paint the dark areas of the hair, like the roots. And to finish, I change my alpha to a small one, like 35, and select a light colour to paint the brightness of my hair (**Fig.22**).

For the eyes, I use the same texture as I used before in a previous tutorial, only this time I paint in some new veins using the Standard brush.

For the highlights, I change the shadow length to 500, the aperture to 110, rays to 220, and I turn on ZMode to achieve a look similar to a GI render. I decrease the value of my ambient to 1, and turn on the fog in the render palette.

For the shader, I pick the TriShader in the shader palette and mix it with a free skin shader that I found in the ZBrush central MatCap library. For the eye, I use the toy shader in the shader palette. To finish things off, I make some final colour corrections in Photoshop, and here is the final result (**Final.01**).

I hope you've enjoyed this tutorial - see you again next month for the creation of a beaten-up character.



Fig.21



Fig.22





## NOTE FROM THE EDITOR:

Rafael has kindly provided us with movie footage to show the process of the creation of his extreme pierced and tattooed character, so grab yourself a cup of tea, sit back, and relax with the ZBrush sculpting and texturing skills of 3DCreative's Master, Rafael Ghencev. Enjoy this month's tutorial and happy ZBrushing!

## RAFAEL GHENCEV

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<http://www.rafestuff.blogspot.com/>

Or contact:

[rghencev@yahoo.com](mailto:rghencev@yahoo.com)





# nPower CAD Translators for Maya

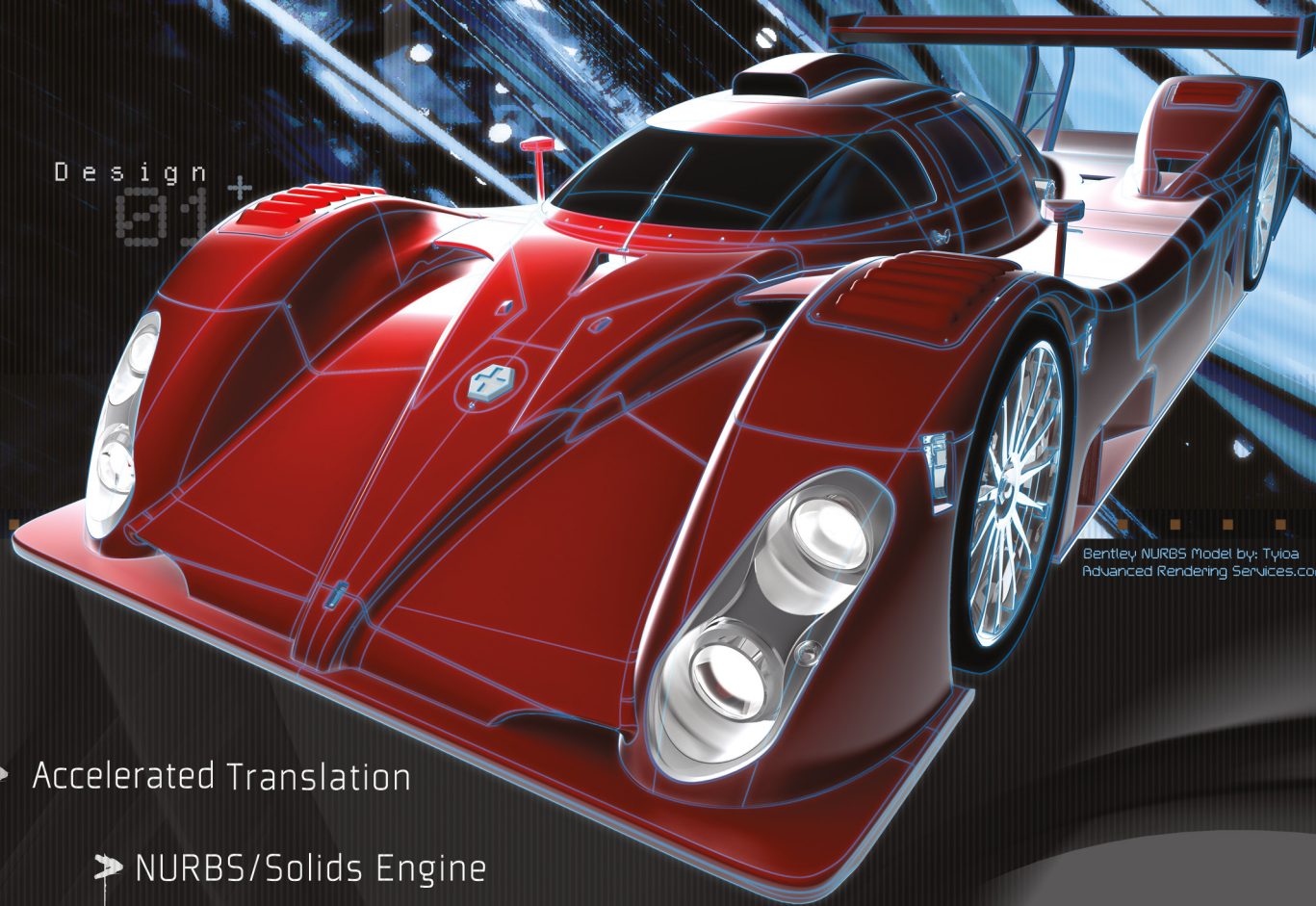
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The image is a full-page background featuring a 3D rendered scene of a derelict industrial facility. In the foreground, a heavily rusted and damaged vintage car is parked on the left. Behind it, a large, multi-story building with peeling paint and broken windows stands. A tall, cylindrical smokestack with a spiral staircase is visible in the background. A large, rusted pipe runs horizontally across the middle of the frame. The sky is a mix of dark and light clouds, suggesting a dramatic, overcast day. The overall aesthetic is gritty and post-apocalyptic.

"IN THIS PROJECT, THE TEXTURES AND MATERIALS PLAYED THE LARGEST ROLE. I COMPENSATED FOR THE LOW POLY OBJECTS IN THE SCENE WITH HIGH RESOLUTION TEXTURES; I UNWRAPPED THE MAIN OBJECT, AND FOR THE SMALL OBJECTS ONLY I USED SIMPLE UV MAPPING."

# REFORM

MAKING OF BY DONÁT SOMOGYI

Donát Somogyi shows us how he used 3ds Max to aid him in the creation of his agricultural factory scene: "Reform".



# MAKING OF REFORM

## CREATED IN:

3ds Max

## INTRODUCTION

Once when I was driving through my town, I discovered an old agricultural factory. This abandoned place kick-started my imagination; the massive structure on the top of the garage and the whole feeling of the place made me feel, quite simply, spellbound. I later returned to the scene and took some photographs to use as reference images, and I worked on the environment for several months in my free time.

## REFERENCES

I started the project, first of all, by collecting some information about the factory and the structural elements on top of the building. This



Fig.01



Fig.02

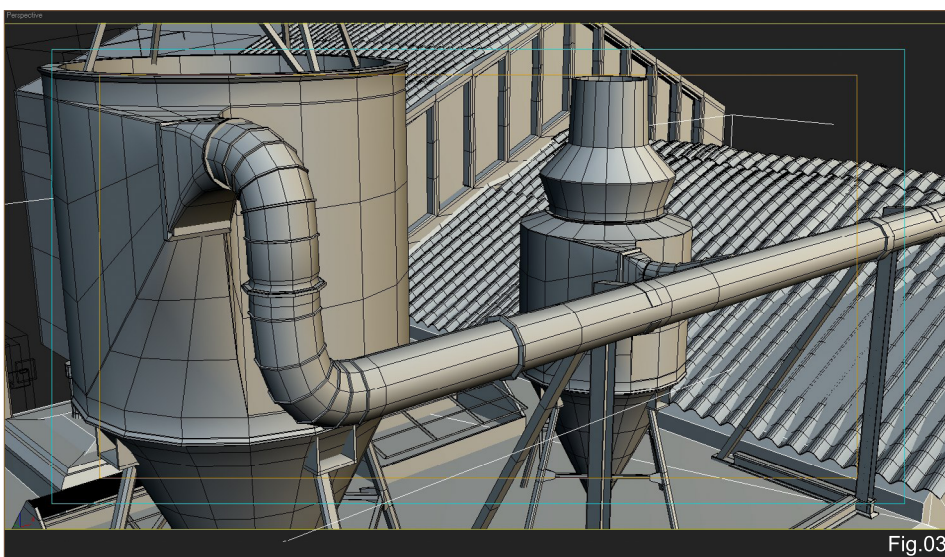


Fig.03

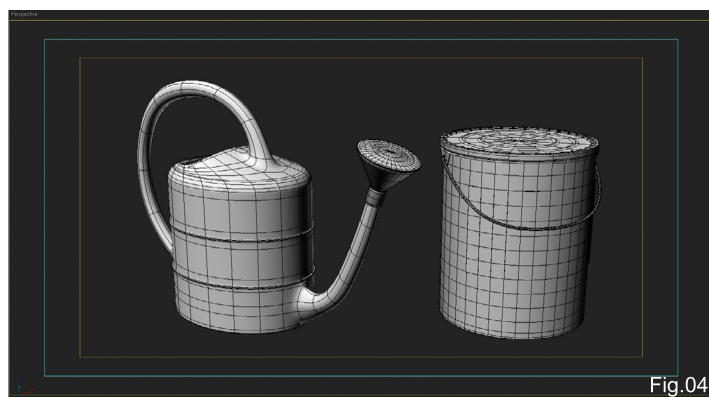


Fig.04

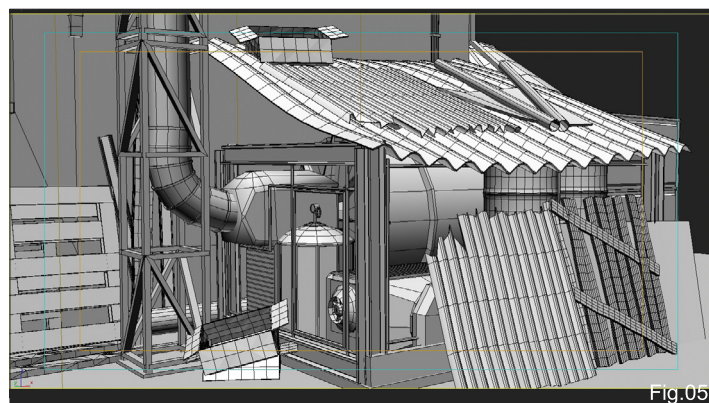


Fig.05

place was actually a sawmill, and at the top of the garage is a sawdust collector. As previously mentioned, I took some photos as reference images, but I also looked for other images to inspire me and to get some interesting ideas. I searched for images and references for not only the shapes, but also for the lighting and texturing (Fig.01 & Fig.02). And, of course, I collected some blueprints for the van that I wished to incorporate into the scene.

## MODELLING

All models were created in 3ds Max using editable poly geometry - a simple and easy way to model. I started with the sawmill collectors; they began as cylindrical objects, and I used the most standard tools to modify them, for example: extrude, chamfer, (target) weld, cut and so on. Here is some of the modelling work shown in wireframe (Fig.03 – Fig.05).

Moving onto the modelling of the van, I set up the blueprints on planes, starting from the front of the van, forming a simple plane. I extruded the edges and moved the vertices to achieve a nice overall shape (Fig.06). After I finished the model, I started to give a more worn and used look to the van; some objects got an optimise modifier, which made it easier to apply damage (Fig.07).



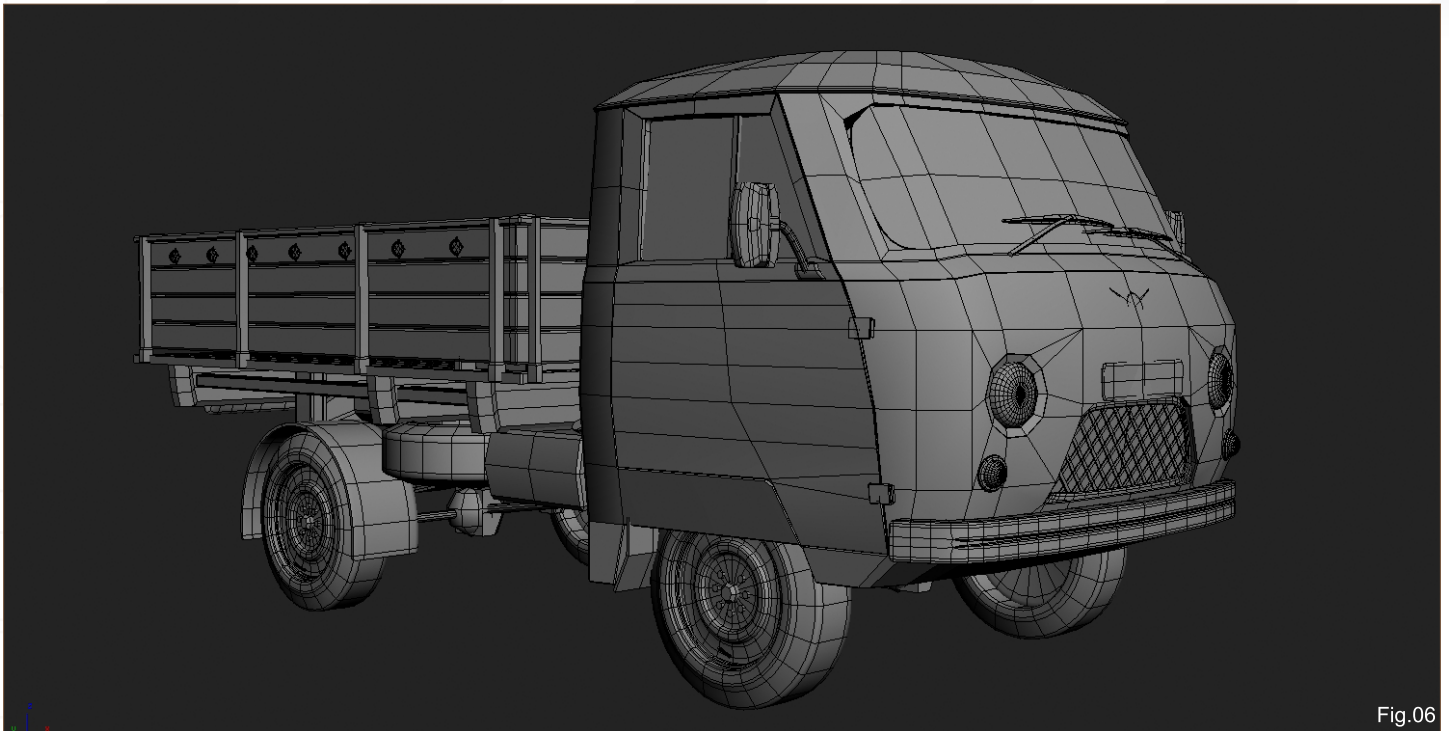


Fig.06

For the grass I used several types of grass strands, scattered with Advanced Painter action item. The plants were handmade from cylinders, scattered nails and spheres; one of the plants was from Xfrog – deformed and modified to suit my scene. To finish off the vegetation, I used an ivy generator to achieve an abandoned feeling.

## TEXTURES & MATERIALS

In this project, the textures and materials played the largest role. I compensated for the low poly objects in the scene with high resolution textures; I unwrapped the main object, and for the small objects only I used simple UV mapping. I collected raw textures from CGTextures.com and edited them in Photoshop – which is the key to achieving great, unique and varied textures (**Fig.08**).

In some cases, I baked an ambient occlusion map. This helped me to understand where the different objects met one another, for example, the car lights or the accessories on the car texture, because it determined the punctual place for the leaking – or likewise (**Fig.09**).

For the shading, I mainly used a VrayMtl shader for pretty much everything (**Fig.10**).

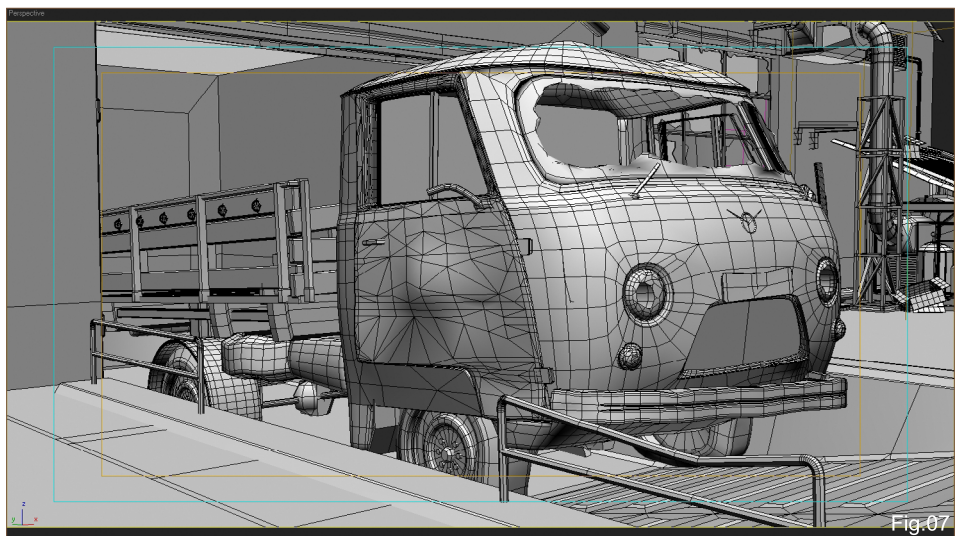


Fig.07



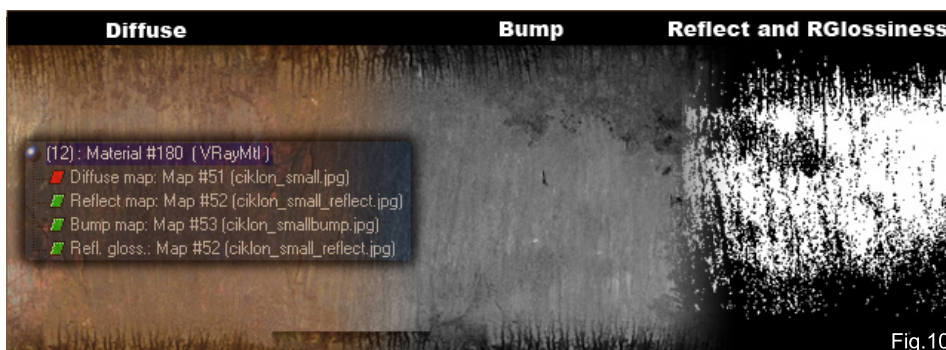
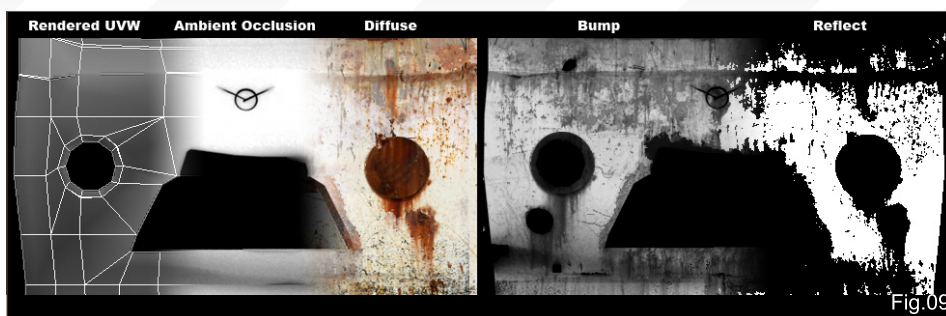
Fig.08



## LIGHTING & RENDERING

As for the rendering engine, I used V-Ray, which I personally find to be one of the best and fastest renderers! There were two lights in the scene: a V-Ray dome light and a V-Ray sphere light; I put an HDRI map into the dome light texture slot and gave the V-Ray sphere light an orange colour, in order to simulate sunlight.

The render settings were also easy and simple. I used GI with an Irradiance map and light cache with the Mitchell-Netravali anti-aliasing filter to make it a bit sharper. I put the HDRI map into the GI environment and in the reflection/refraction slot. And finally, I used the V-RayPhysicalCamera for the final render. Here are the passes (Fig.11 – Fig.13).



## POST-PRODUCTION

This found this to be the most enjoyable part of the work. First of all, everything was put into one image, because I'd rendered the grass, ambient occlusion, V-Ray and so on, in different passes. I didn't want to waste too much time with the post-production – everybody has their own style after all, and I didn't want to copy anyone else's. So I started by putting another sky behind the scene. After changing the contrast, hue and saturation, and colour balance, I gave a diffuse

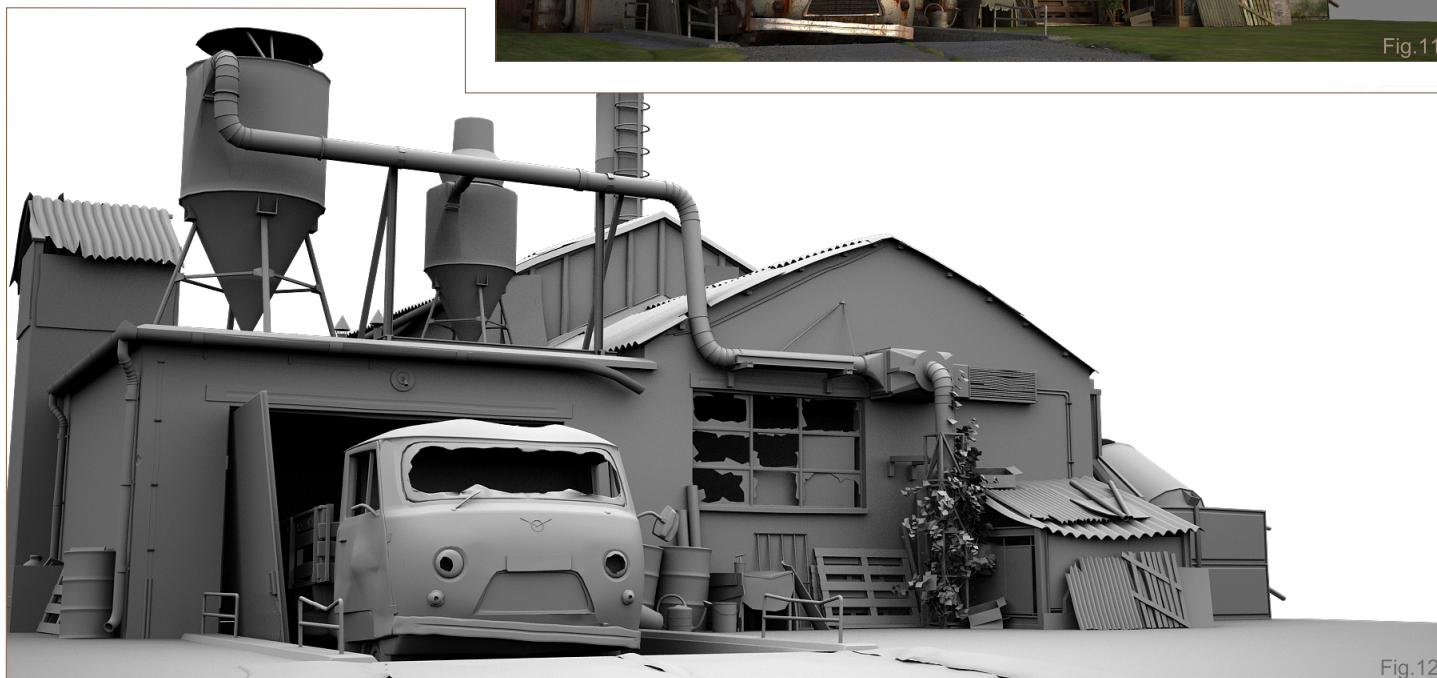






Fig.13

glow to the image and used the Sharpen filter to make the picture appear sharper overall. A few details were added after rendering, for example the dirt on the window and a little more leakage on the walls. I dramatically changed the colours in the end because I wanted to achieve an orange hue, similar to the sunset (Fig.14).

## CONCLUSION

I hope this "Making Of" article has been informative and interesting for you. It was a lot of fun to create, and if you have any questions at all, please feel free to contact me.

Thanks for reading!



Fig.14



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We chat with Concept Artist / Illustrator for Big Sandwich Games, Jeffrey Simpson about his influences, styles, tips and home city of Vancouver.



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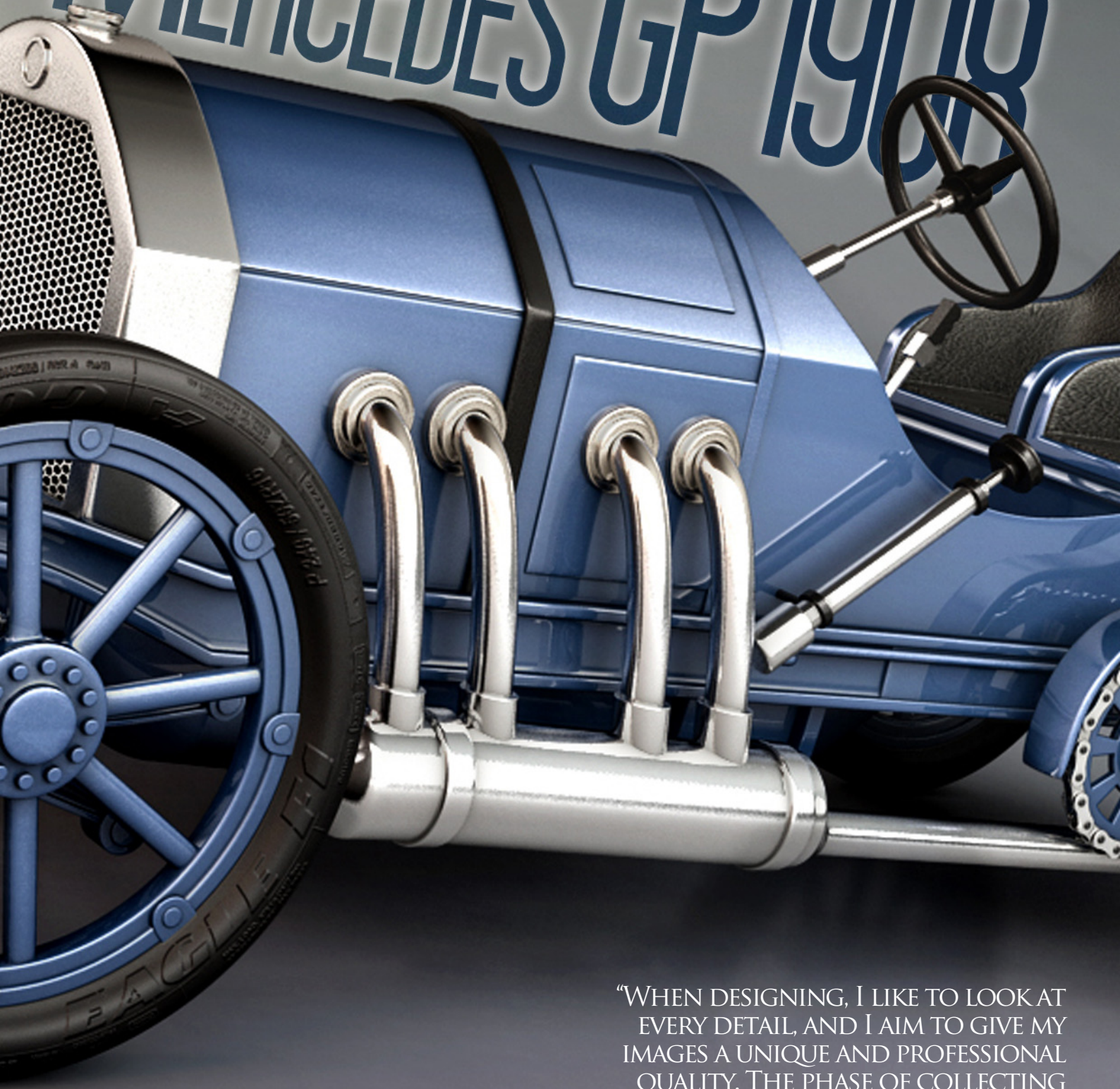
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Marco Antonio Delgado has always loved classic cars of the early 20th century. In this "Making Of", he draws on this personal interest and showcases the simplistic beauty of the Mercedes GP 1908.

# MAKING OF BY MARCO ANTONIO DELGADO MERCEDES GP 1908



"WHEN DESIGNING, I LIKE TO LOOK AT EVERY DETAIL, AND I AIM TO GIVE MY IMAGES A UNIQUE AND PROFESSIONAL QUALITY. THE PHASE OF COLLECTING INFORMATION ABOUT THE MODEL IS VERY IMPORTANT TO ME – REFERENCE PHOTOS, BLUEPRINTS, HISTORY AND ANYTHING RELEVANT IS NECESSARY IN ORDER TO MAKE A GOOD, DESERVING IMAGE."



# MAKING OF MERCEDES GP 1908

## CREATED IN:

Avid Softimage XSI 6.5, Mental Ray

In this image I wanted to represent the beauty that, in my opinion, all classic cars have. I have always been attracted by the cars of the early 20th century because of their beauty and the simplicity of their design - they are definitely the jewels of the automotive industry! This is why I decided to create a 3D image of the Mercedes GP 1908. This particular model is one of the first models of the motor world, and also one of the best cars ever made!

When designing, I like to look at every detail, and I aim to give my images a unique and professional quality. The phase of collecting information about the model is very important

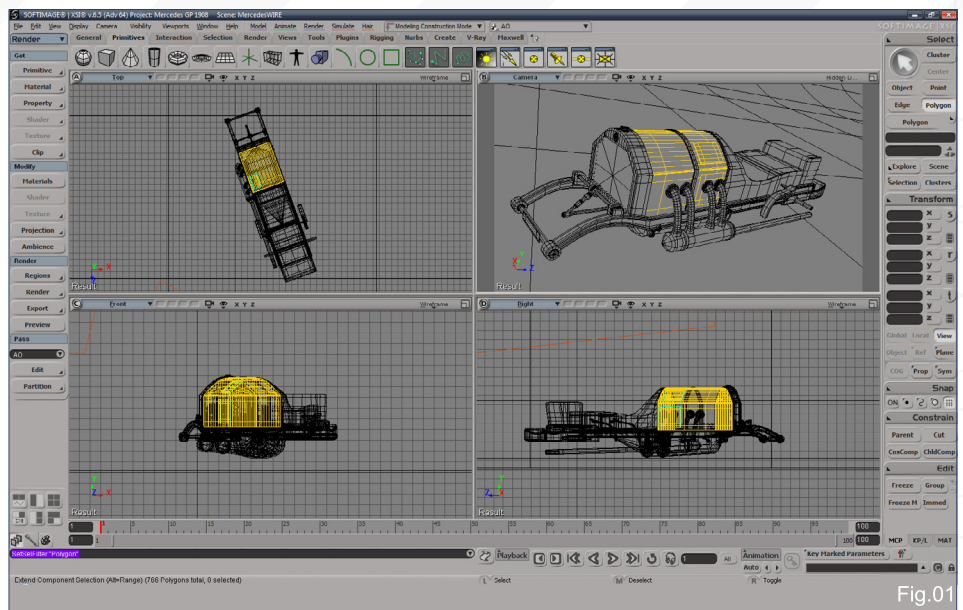


Fig.01

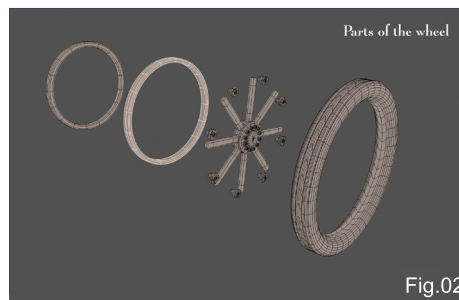


Fig.02

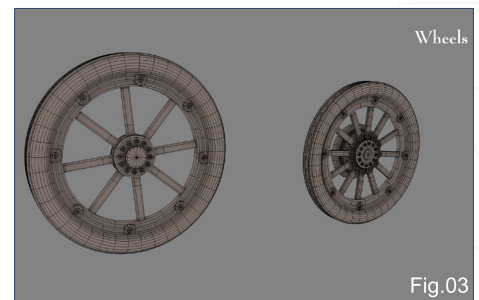


Fig.03

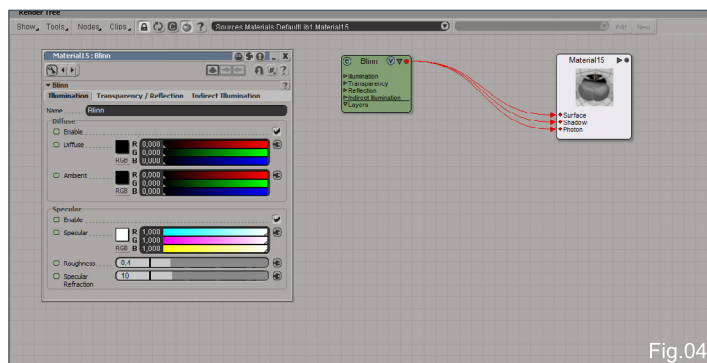


Fig.04

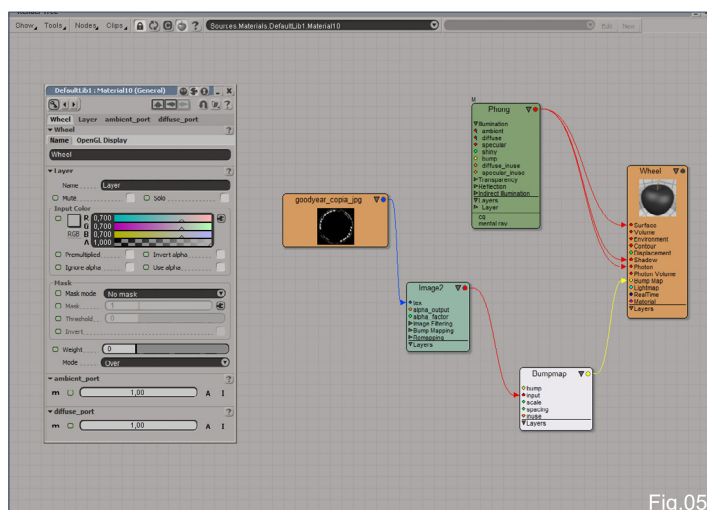


Fig.05

to me – reference photos, blueprints, history and anything relevant is necessary in order to make a good, deserving image and to get the correct measurements and proportions. Having said that, I also always take some artistic licence when creating my artwork, to create my own style and make the image as interesting as possible.

This design was created using Avid Softimage XSI 6.5. Modelling was simple because I used polygonal modelling; starting from primitives, or from a view, I created the profile and then made extrusions, adding polygons and creating edges, and so on (Fig.01).

As you can see, the rest of the objects were based on cylinders and spheres – very simple to model. The most complex parts to model were the wheels – especially the back ones as they have more parts and a system of chains, such as motorbikes and bicycles also have. I modelled the small gear wheel of the chain and the other gears, like the axes; I didn't model the relief of the tyre because I added it by means of a bump map when texturing (Fig.02 & Fig.03).

The majority of the textures used were Phong and Blinn shaders, and I used the car shader for the bodywork. Classic cars like these do not have metallic paint, but I wanted to give this car such an appearance to give it a touch of modern design (Fig.04 - Fig.06).



The grid of the radiator is also a texture. I didn't model some of the details of the radiator because it would have been extra work that wasn't necessary. With the texture it looks perfect (Fig.07)!

For the illumination I used Mental Ray, a powerful render engine included in Softimage XSI. I used an HDR environment image which,

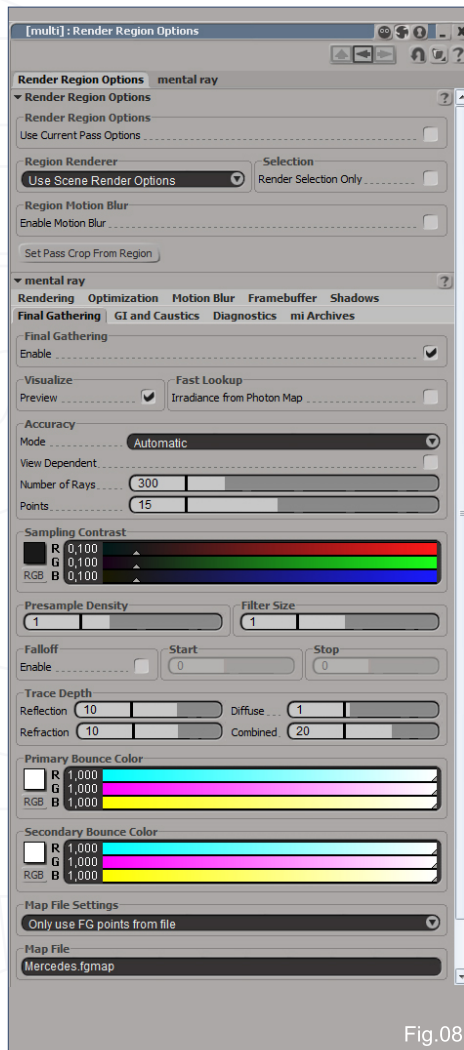


Fig.08

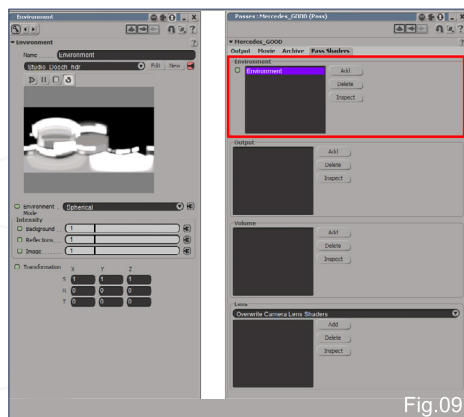


Fig.09

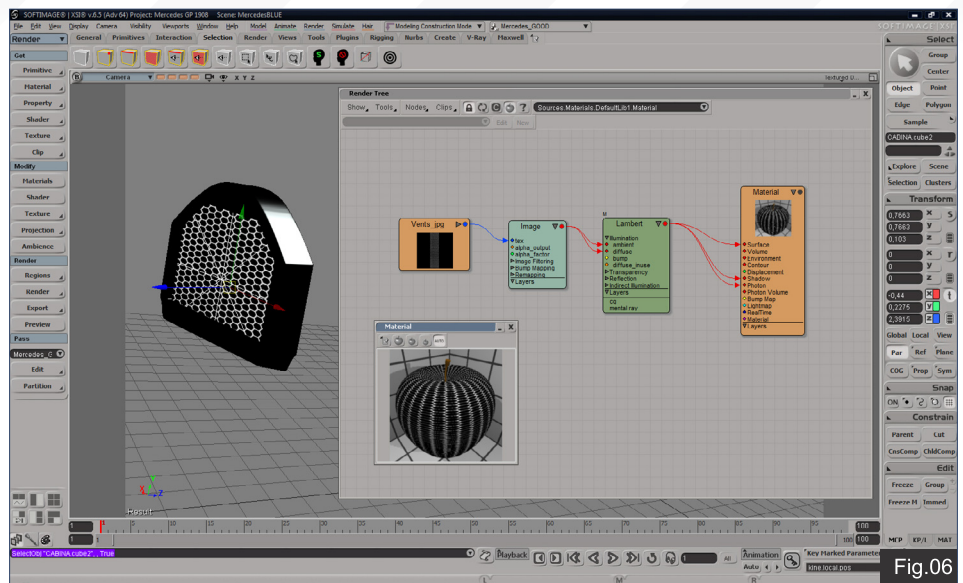


Fig.06

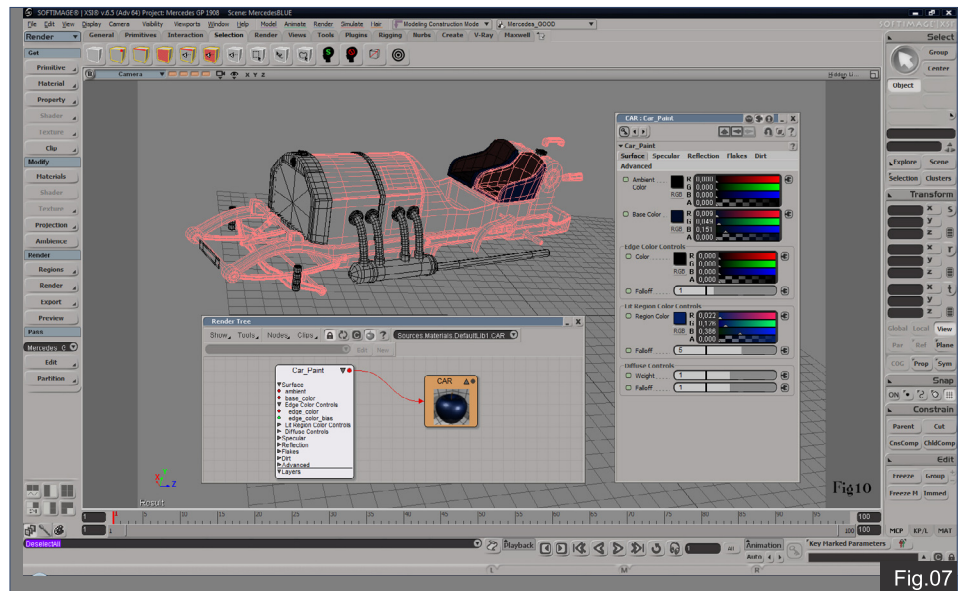


Fig.07

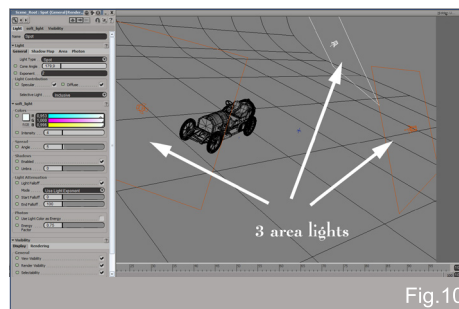


Fig.10

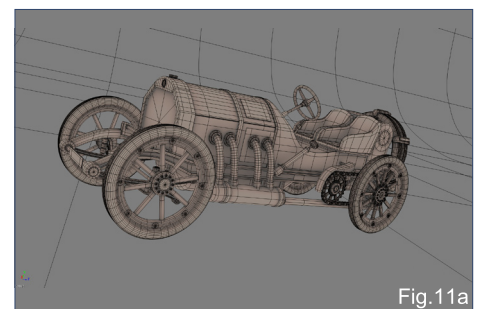


Fig.11a

together with Final Gathering, achieved an illumination effect similar to that of a picture taken in a photographic studio (Fig.08 & Fig.09).

The image I used had black and white tones to emphasise the reflection of the metals.

The lights were a spot light, with an area light

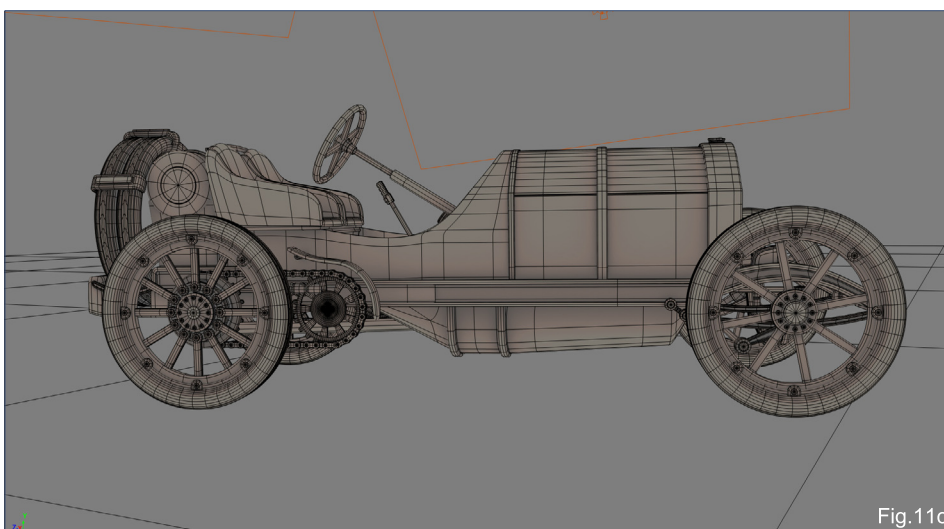
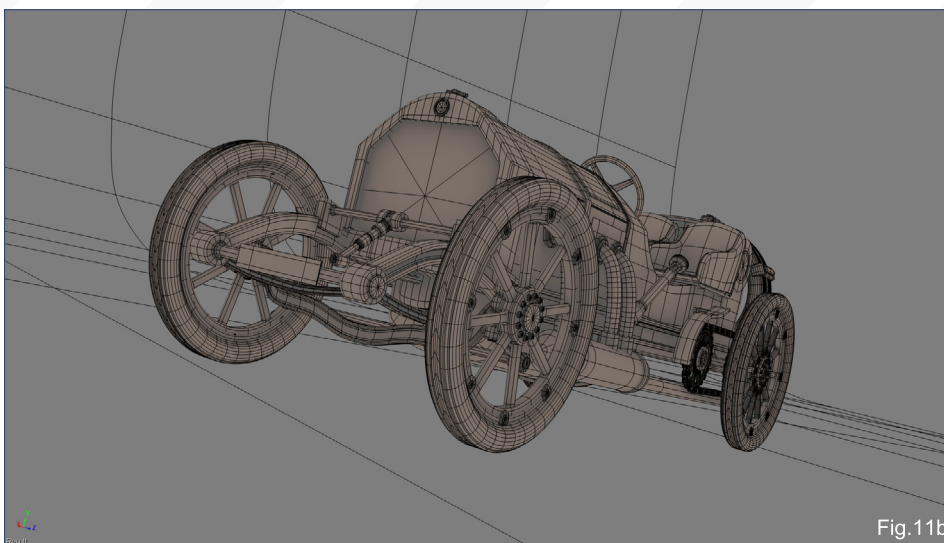
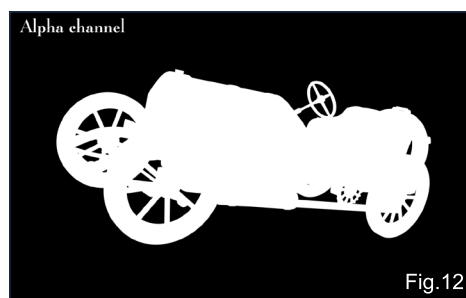
activated, thereby giving more quality and creating smooth shades. In the scene there are three different lights that were placed to roughly follow the rule of the three-point lighting setup, in order to achieve a more uniform light and quality. The ground was also given a Phong shader with a very smooth reflection and a little gloss (Fig.10).



The camera was very close to the ground and turned slightly, giving more importance to the car and making a more creative background (Fig.11a - Fig.11c).

Once the scene was created, I made some render tests when applying the textures (I didn't texture the complete scene), and then started to render. I always prefer to make renders whenever I texture, because in this way I can correct any errors in the textures and materials. In the render tree I created the materials and applied the textures – some of which were created in Photoshop or taken from libraries of textures, giving greater photorealism to the image.

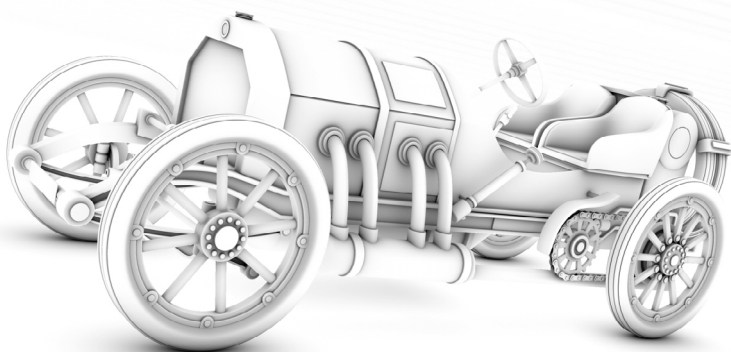
When rendering I used several passes in order to have more freedom, and I easily merged them in Photoshop, placing the reflection, alpha, AO, and so on, passes as I wanted (Fig.12 & Fig.13). The several passes made were: ambient/diffuse, shades, AO (ambient occlusion), reflection, specular, refraction, DOF



(Fig.14), volumic (Fig.15) and alpha channels – one of the car and the other of the background. In this way, the final image could be mounted for much better effect.

Using Adobe Photoshop, I merged all the layers. I made some adjustments of the colour, saturation and brightness, and I applied an effect created by a Photoshop plug-in called "Bleach Bypass" (Fig.16). Very interesting!

### ambient occlusion



Rendering is my favourite part because I can change the values or settings until I achieve the effect I personally want and like. I enjoy making many tests and creating various atmospheres, and then choosing the one I like the most. In this image, I finally added the depth of field (DOF) layer to create a slight defocusing effect on the back section, therefore simulating a camera focusing on the front and central part of the car. I added a slight noise layer and then applied the volumic layer to create a warmer atmosphere – more magic – and to give the car a touch of magnificence!



I was satisfied with the final image (Fig.17); although it's not a very complex model and is set on a simple plane, I wanted to create the scene as if it was a new concept for the classic car, something in the present day with all the improvements and comforts, whilst being faithful to the original. I didn't want to just make a copy of the car; I wanted to give it a personal touch.

Thanks for reading.

## MARCO ANTONIO DELGADO

PIXELTALE STUDIO

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[webmaste@pixeltale.com](mailto:webmaste@pixeltale.com)

### DOF

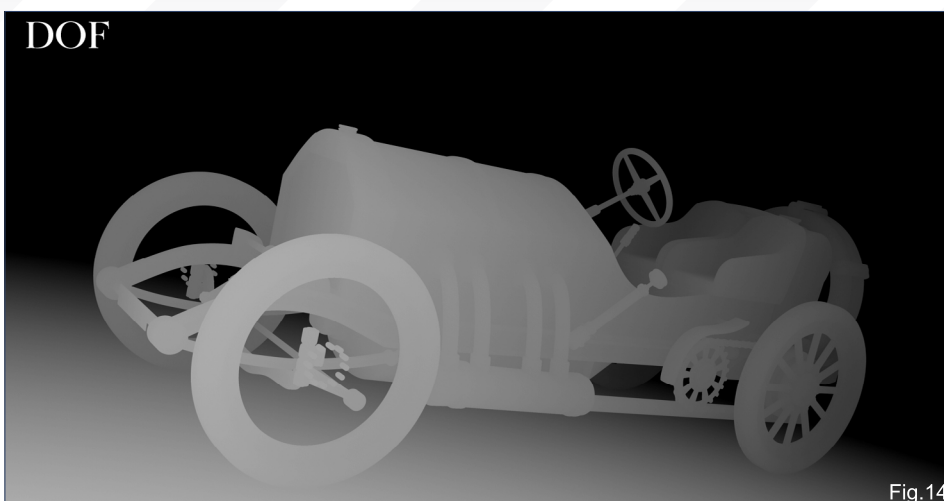
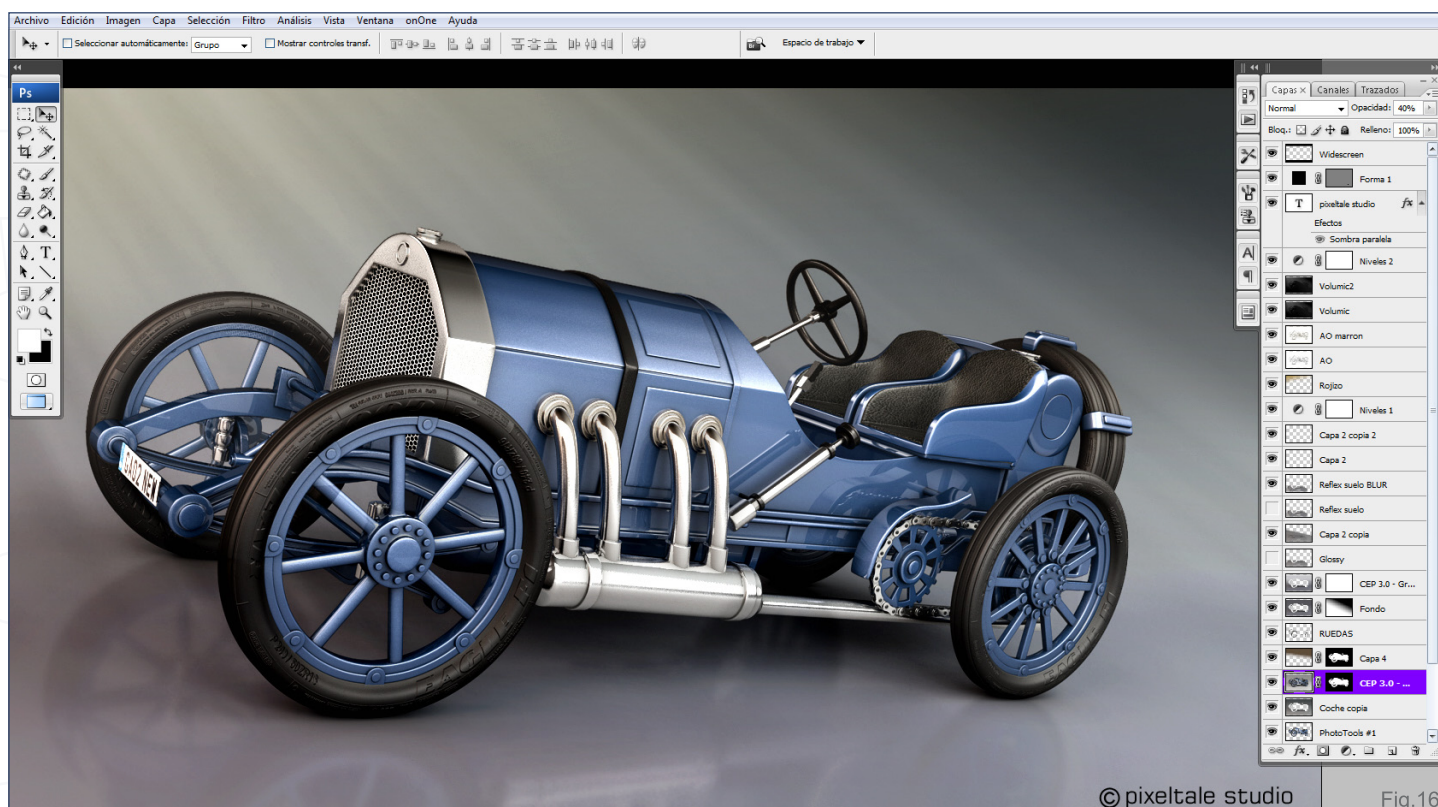


Fig.14

### Volumic



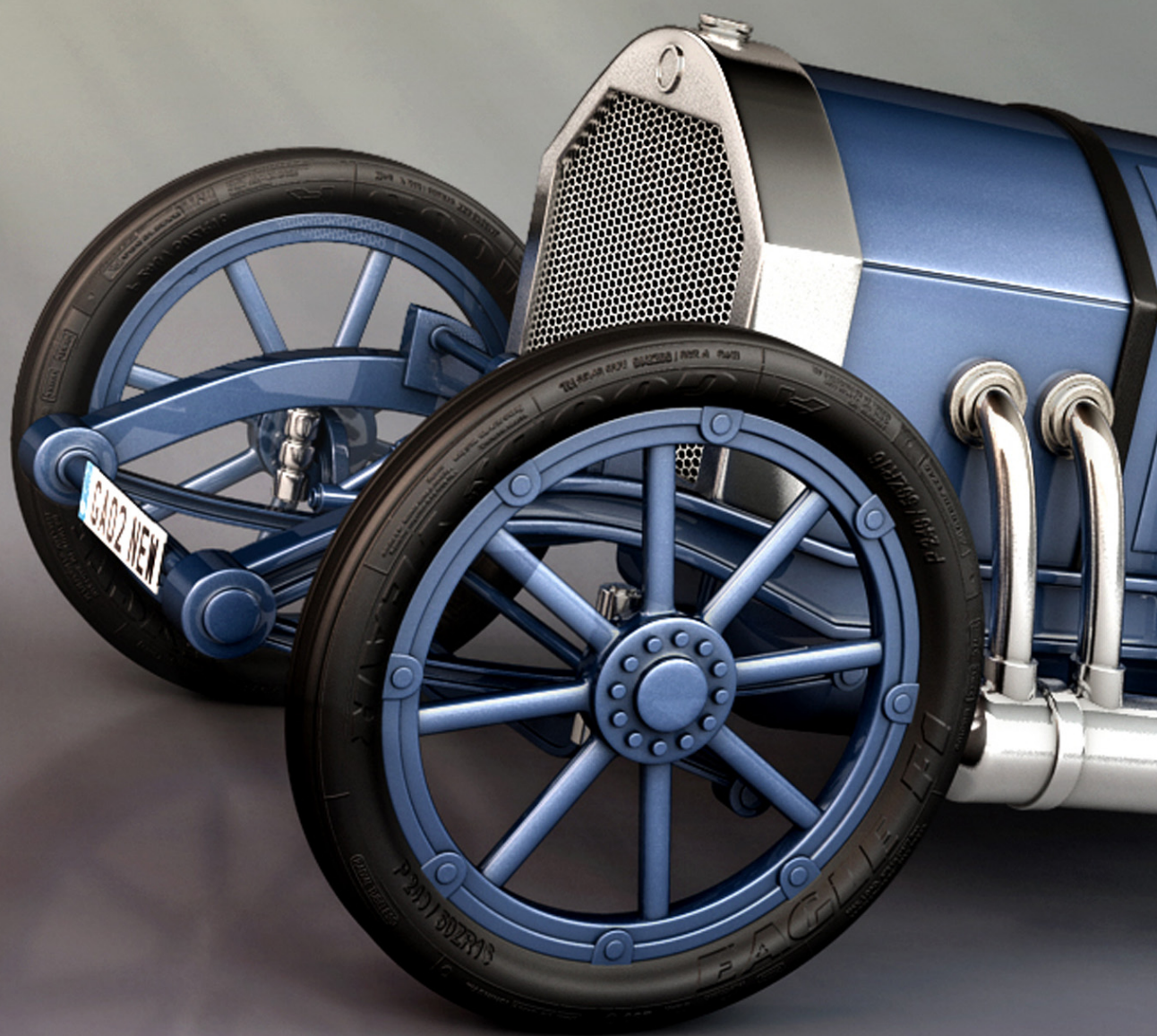
Fig.15



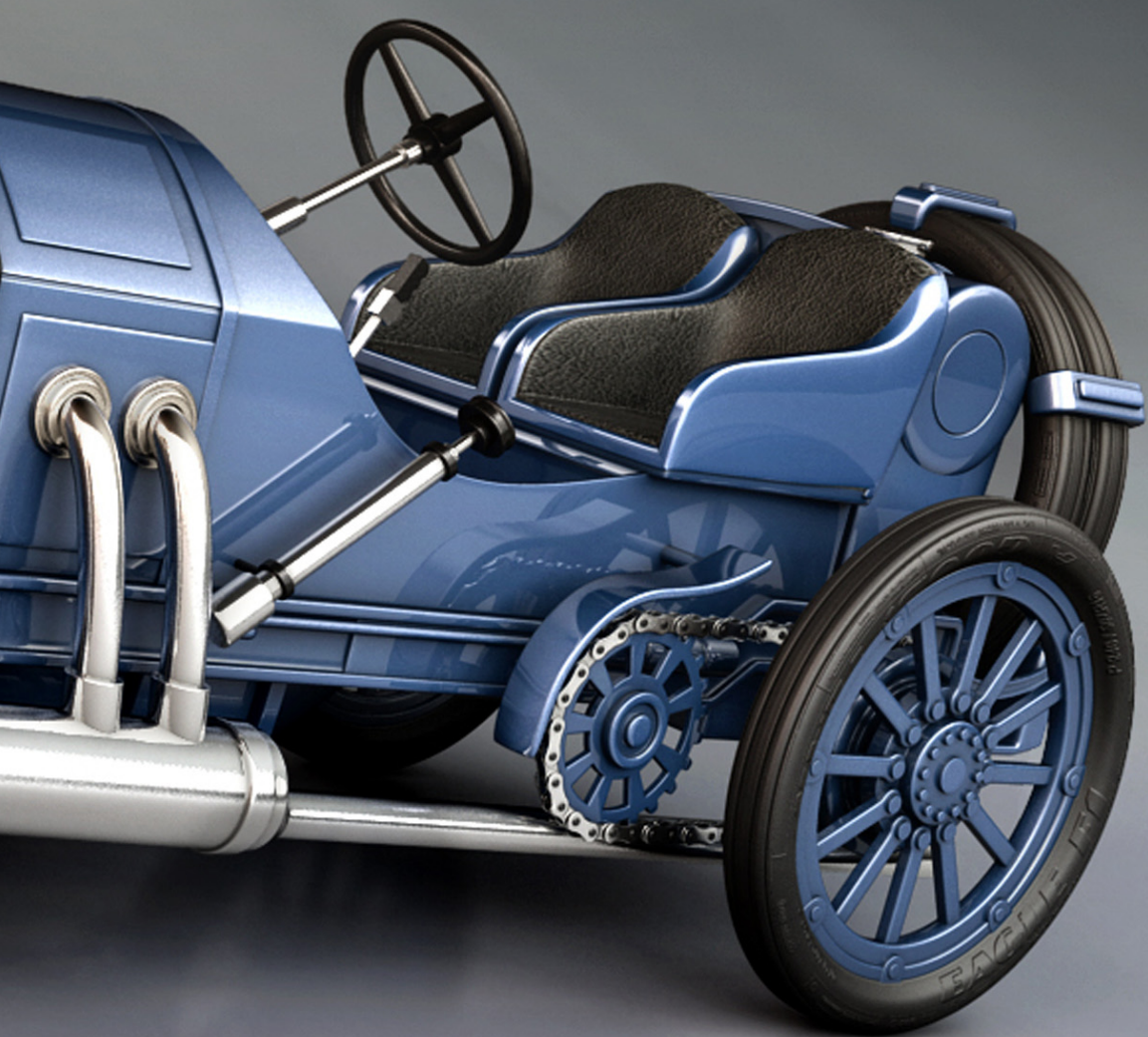
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Fig.16









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# 3DC

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issue of 3dcreative

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**Roman Style**

**Aaron Sims**

## ARTICLES

**My Mental Ray**

**Igor: Hunchback of another  
name**

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Space Ninja

**ZBrush Character Creation**

Part 5: Beaten-Up

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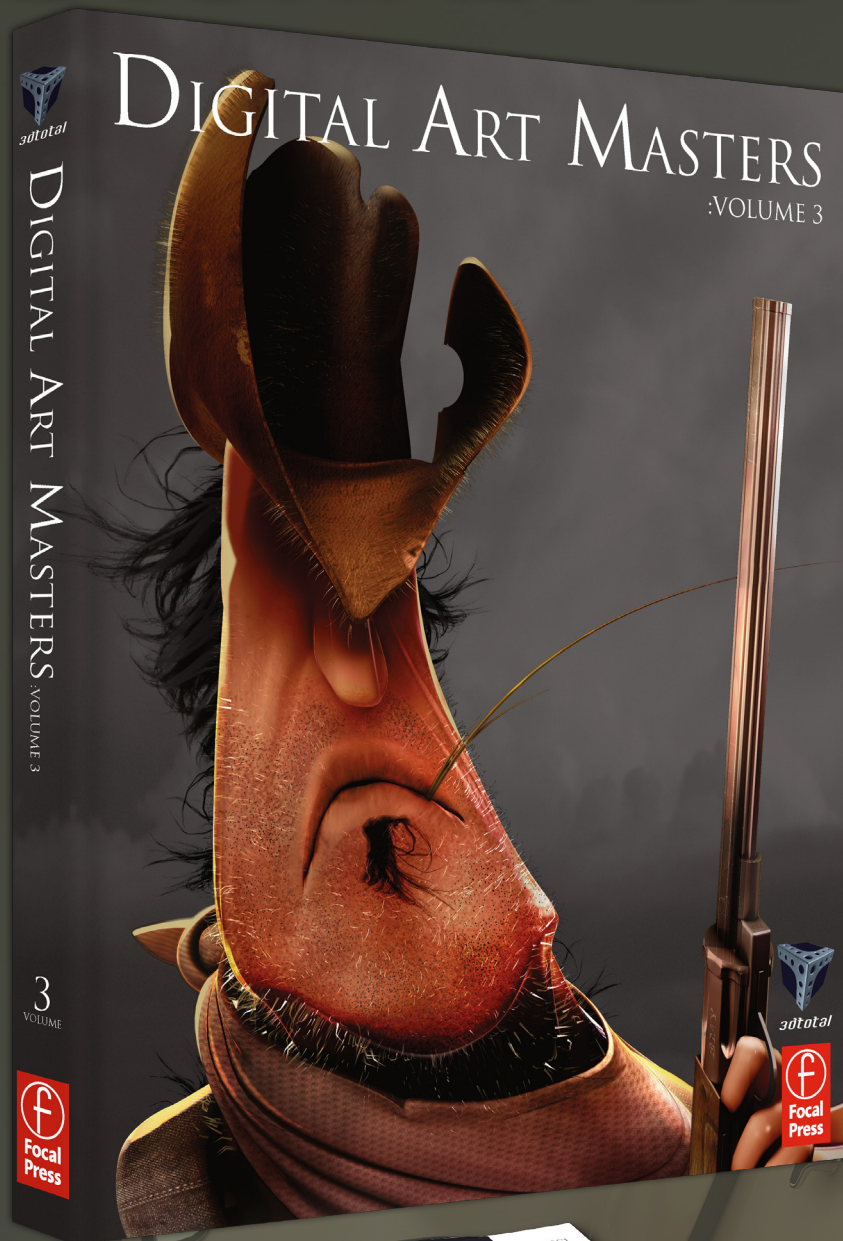
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# DIGITAL ART MASTERS VOLUME 3



With the release of 3DTotal's new book, *Digital Art Masters: Volume 3*, we have some exclusive chapters for you...

This book is more than just an artwork book. Not only does it feature full-colour, full-page images, but each artist has given a detailed description, in their own words, of the creation process behind each piece of published artwork. And they've done it especially for this book!

This month we feature:

**"Vespa 150GL"**  
by Jure Zagoricnik





The following shots of the "Vespa 150GL" book pages are featured here in full-resolution and can be read by zooming in...



## VESPA 150GL

BY JURE ZAGORICNIK



### INTRODUCTION

In the past I've modeled a few cars, but never a bike. So, when a Slovenian 3D website posted a challenge called "Motomania" I thought it was a perfect opportunity to test my skills! I am a big fan of the MotoGP series, but for some reason I didn't want to model a high-tech modern bike. I Google-searched for some older bikes, and when the Vespa popped up I knew right away I wanted to model this baby! I did my research and checked out quite a few models and decided on a 1962 Vespa 150GL. Usually, when I start doing a personal project, I only have a rough idea on what I want the final image to look like. But, what I did know was that I wanted to model a very detailed bike. "Will I be making a studio render or creating a whole scene?" was not something I was thinking at the time!

The programs that I used during this project were 3ds Max for modeling, V-Ray for rendering, Macromedia Flash for texturing and Photoshop for post production.

### GETTING READY!

The first thing on my list was to find some decent blueprints. I searched but didn't find anything, so there was nothing I could do but look for some decent side, front and back photos. In the end, I settled for a side view and collected as many photos as possible from all possible angles. Luckily, old Vespas are still popular and many people dedicate their lives to restoring them. With plenty of reference material, I went through all the pictures, checking different parts so I could make a work plan. Apart from the engine and some small bits here and there, I didn't see anything particularly difficult. With a rough plan in my head, I proceeded to the modeling.

### MODELING

I am most comfortable with poly modeling, so I used this technique to model 95% of the parts. I usually start with a basic shape, like a plane, cube or a cylinder. The Symmetry modifier is a must for me, so every object is only modeled as one half – not only is it faster but also easier to change things later on! As I didn't have any blueprints, I used a photo for reference and proportions. Lately, we are just so used to having blueprints for everything that we don't really appreciate them anymore. But not having them makes everything twice as hard!

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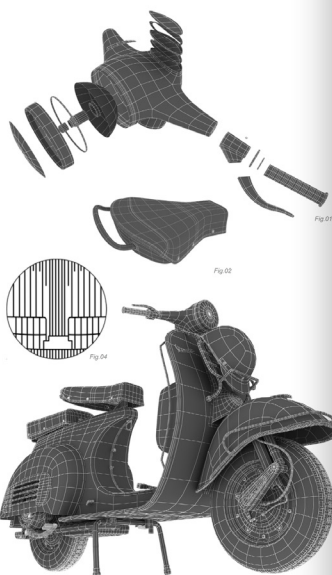
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I started with the handlebars, roughing the shapes with as few polygons as possible. When I was happy with the shape I started to do the details, or as I call it, the fun stuff (cutting, connecting, moving vertices, and so on). Many people just model an object so that it looks right, but I personally like to stick to quads – triangles are evil! They look cooler and are more friendly when it comes to subdivision. You can also ring and loop them without having to manually select the edges (Fig.01)

With the details on the handlebars, I continued with the body. Here I had to use splines for the chrome piece that runs all around it. I selected the outer edge of the object and converted it to a spline. The rest just involved checking the box so that it rendered, and then setting the thickness.

With the body mostly finished, I decided to do the seat – well two of them. Creating the basic shape wasn't that difficult; instead of using a texture for stitches I decided to model them. With this in mind, I selected the edges where the stitches would go and converted them to splines which acted as my guides. Then I modeled a single stitch (bent cylinder) and used the spacing tool to evenly distribute the stitches along my spline guides. I ended up with a decent layout that didn't require a lot of tweaking, mainly just rotating a few stitches and moving a few of them around the corners of the seat (Fig.02)

Tires were next! I usually model the tube and the thread as one piece, but this time I decided to do each piece separately. This cut down the poly count quite a bit. The tube was just a basic cylinder and the thread was made using splines that were later extruded. To fit the thread to the shape of the tire, I used the Bend modifier with some manual tweaking. Once they were aligned I arrayed the thread, merged all the pieces into one and used another



Bend modifier to fit it all around the tire – just remember to set the pivot point of the thread to the center of the tire! Logos and signs were made by importing vector versions and then extruding them. To get rid of the 90 degree perfect edge, I beveled the top polygon inwards and extruded it just slightly (Fig.03)

### TEXTURING, SHADING AND LIGHTING

With all the pieces modeled, I quickly unwrapped a few parts that were screaming for a paint job. I simply used planar mapping, exported the maps and took them into Macromedia Flash. Flash you ask? Yep! I do a lot of Flash work in my full-time job, so

I guess I'm just used to it now. Plus vectors are scalable without losing the quality, which is another plus if you want to increase the resolution. The paint scheme was pretty straightforward: I outlined the patterns and filled them with color (Fig.04).

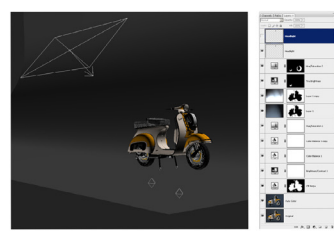
For the leather, I used a texture I found on the Internet. Most of the shaders are basic V-Ray Materials with different reflection and glossiness values – I am far from being a materials guru! I mostly go for a trial and error method, which takes a while but you learn a lot (Fig.05).

With studio lighting in mind, I had a few concerns as this bike has a lot of reflective materials, not to mention chrome parts. You know what they say, "reflections bring materials to life" I never use HDRi for lighting so my collection of HDRi maps was very limited. Luckily, I managed to find a few free ones and modified them so they worked for me. In the end, I had three HDRi maps (color, grayscale and color blurred). With the color HDRi in the environment reflections map, I started to tweak materials. Parts that I wanted to control the highlights got their own HDRi map in the environment slot. To get them just the way I wanted meant a lot of test renders while rotating the HDRi but it was well worth it in the end!

For lighting, I used one big V-Ray light above and two omni lights below the motor. The latter ones were to brighten up the bottom part that didn't receive a lot of light (Fig.06).

I used the default Max camera to render the scene. For the background, I created a simple plane that rose up behind the bike to create a soft transition.

**RENDERING AND POST PRODUCTION**  
I hate waiting for renders, so I try to lower the render times as much as possible. A scene at 800 x 600 with



Global Illumination took around 15 minutes on an AMD 4200 Dual Core. To render masks for different parts, I switched to the Default Scanline Renderer and just applied a self-illuminated white material to the parts I wanted to be masked, and 100% black material to the rest.

I opened Photoshop and loaded up the render. First, I did some color corrections and other adjustments using Levels and Saturation. Parts that were too dark were brightened up using the masks (tires). I also used a lighting filter on the background to get some darker and lighter spots. I could have spent ages tinkering with different adjustment layers, but one has to say "stop!" sooner or later. What I like about Photoshop is that you don't have to wait another 15 minutes to render a scene if you want to change the color of the background; possibilities are endless and your imagination is the limit, so think what can be done inside a paint program before you wait another two hours re-rendering stuff (Fig.07)

### CONCLUSION

What have I learnt from this project? In the past, I have always wanted my renders to be perfect, right from the rendering engine. What I learned here is that you can fix/change/improve a lot of things in the post production phase using masks and different layer blending techniques. I was really surprised at how the bike turned out in the end, and what means the most to me is that people like it as well!

### ARTIST PORTFOLIO



SCENES

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Is a resource website for the CG community; amongst our growing number of products for CG artists, we produce two monthly downloadable PDF magazines – 2DArtist and 3DCreative. We are based in the West Midlands, in the UK, and our intention with our magazines is to make each issue as full of great articles, images, interviews and tutorials as possible. If you would like more information on 3DTotal or our magazines, or if you have a question for one our team, please use the links below.

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# CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER

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**Issue 041 January 2009**

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The final chapter will discuss lighting and rendering techniques and show how a simple lighting rig can be set up, along with different render passes ready for a final composite in Photoshop.

3D MAX



# AGED & WEATHERED ENVIRONMENT

CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER

PART 5: TEXTURING PRINCIPLES

## TEXTURE RESOLUTION

The size of your textures will always depend on the output of your final render, but is okay to make the textures bigger than they need to be because they can always be reduced. In fact, when painting detailed textures it is often easier to make them larger than needed in order to help the painting process. Once they are finished they can be scaled down to reduce file sizes. The main thing is that you have consistency throughout your image.

The back wall in **Fig.01** is using a 1024x1024 map whilst the left wall is using a 512x512, with

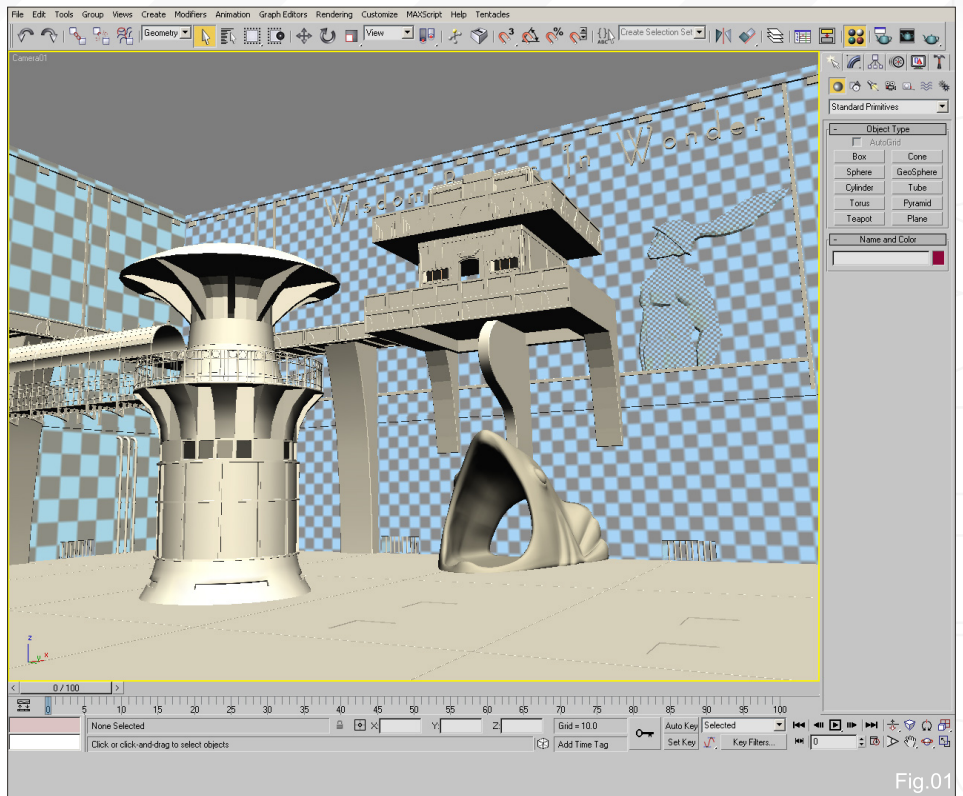


Fig.01

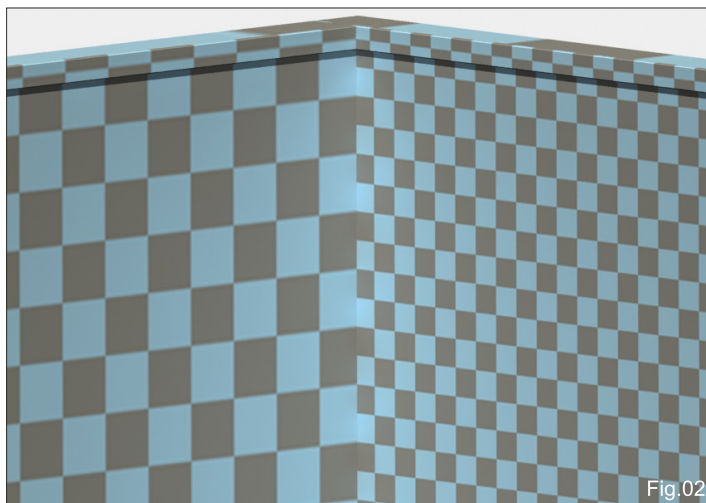


Fig.02

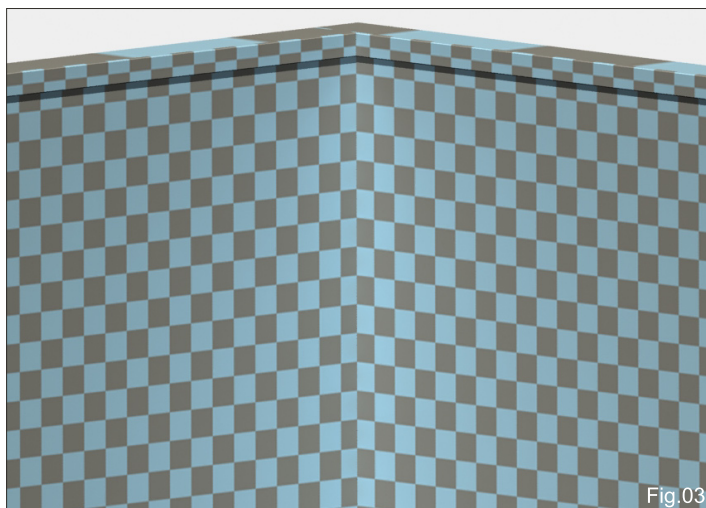


Fig.03

the same size checker pattern. You can clearly see the difference here and if we were using an actual texture then we would see a difference in the resolution (**Fig.02**). Smaller textures can be tiled in order to keep them consistent with larger textures, but be aware that this will result in more apparent tiling issues. The other aspect to consider is the scale of the texture in question. In **Fig.03** the left hand map has been scaled by 200% (UV tiled by 2.0) and brings the checker map sizes closer together, but if the texture were the same then its scale would also be doubled, which could cause another issue.

The frieze in **Fig.01** also uses a 1024x1024 map, which you can see is far too big compared to the scale of the wall. If you imagine the width of the wall being 1024 pixels then the character should be a fraction of this size. If both these elements use the same texture then the unwrapped character could have its UV's scaled within the Unwrap UVW window in order to match the resolution. These are a few of the considerations to bear in mind when deciding on which textures to use.

There are two principal methods by which the scene will be textured. The first involves exporting a wireframe version of an unwrapped mesh that will be textured from within Photoshop by combining various references. The second technique is a more procedural one that utilises the Composite map built into Max, which we will look at shortly.

## THE TOWER

As you will have noticed from the mapping tutorial, the tower has been mapped and unwrapped and is now ready to be made into a texture



template. Apply an Unwrap UVW modifier and then click on the big Edit button. This will open up the dialogue box as seen in **Fig.04**, which shows the unwrapped UV's. Click on Tools along the main menu and then on Render UVW Template. This will open up the render UVs dialogue box seen on the left. Here you can input the size of the template (1024x1024 in this case) as well as alter further settings. Keep the colour of the edges as white (lower box) and uncheck Seam Edges, which will keep the all of the wireframe as one colour. Now click on the bottom Render UV Template button and then save this out. You can now open this in Photoshop, duplicate the layer and set it to Screen blending mode. Always keep this layer at the top of the palette and then you will be able to see the guidelines overlaid across your PSD.

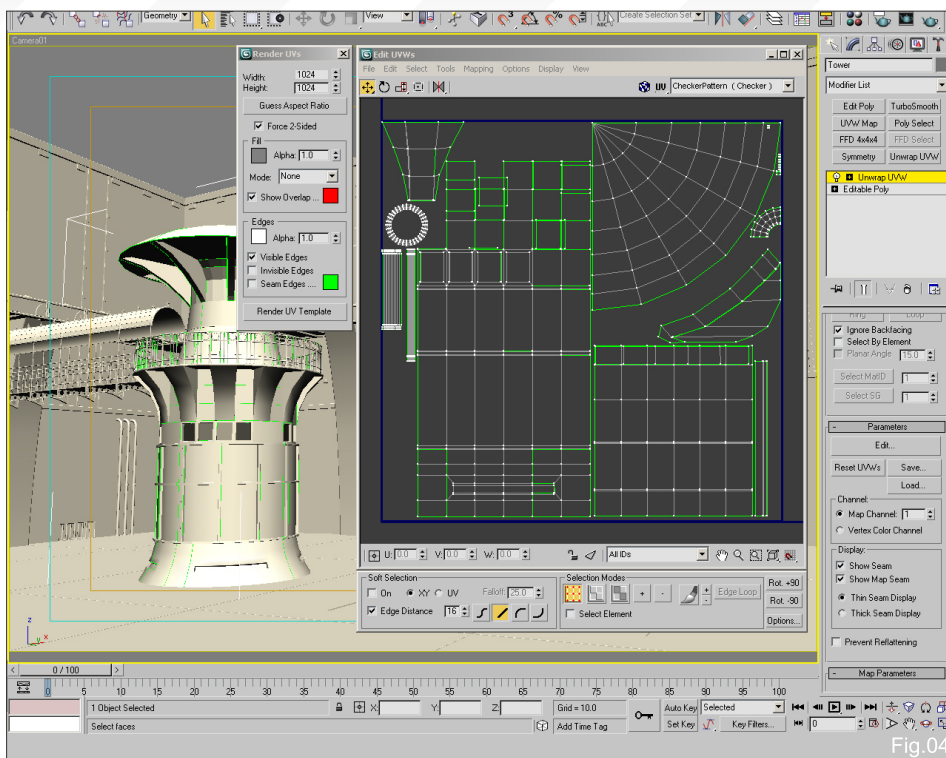


Fig.04

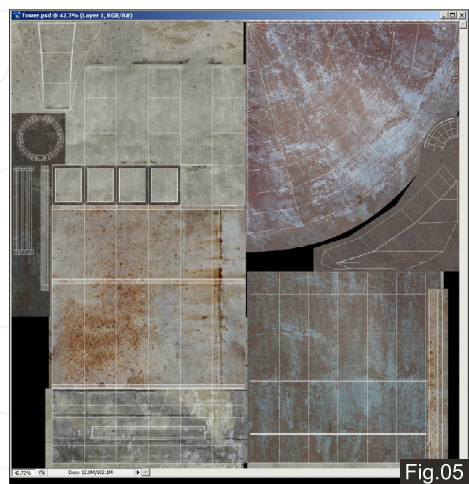


Fig.05

In **Fig.05** you can see how layers have been placed beneath the wireframe template. I used the same metal for the canopy and upper section of the tower (red03\_TTexv3\_R2) and two metals from TTexV2\_R2 (metal111 and metal20) for the base. For the concrete I used a stone texture from TTexV3\_R2 (green\_07), which I desaturated to make it grey.

In **Fig.06** you can see that the base layers comprise of a few textures that have been

applied using different blending modes. Stone20 is the bottom-most layer and stone18 and plaster07 have been applied on top to add some variety. The original concrete layer (green07) is the base layer which is visible in the top left and I have also added some rust across the lower part of the tower.

## ADDING DIRT AND GRIME

So far these textures only make up the base layers, even though they number quite a few.

No dirt or grime has yet been added and we will deal with next. I have used two textures for this part, which can be seen in **Fig.07**. The bottom texture was inverted (black becomes white and vice versa) and then set to multiply at 44% opacity. This map represents the dirt below the metal panels near the base and the grime that has accumulated underneath the balcony. The dirt under the canopy has been extracted from a stone texture by colour selecting the green area and then setting it to Overlay at 70% with some colour correction. The rivets were taken from TTexV2\_R2 (metal08 and metal09).

The main thing when adding dirt is to consider where it would gather and the types of stains that would be made. In **Fig.08** you can see

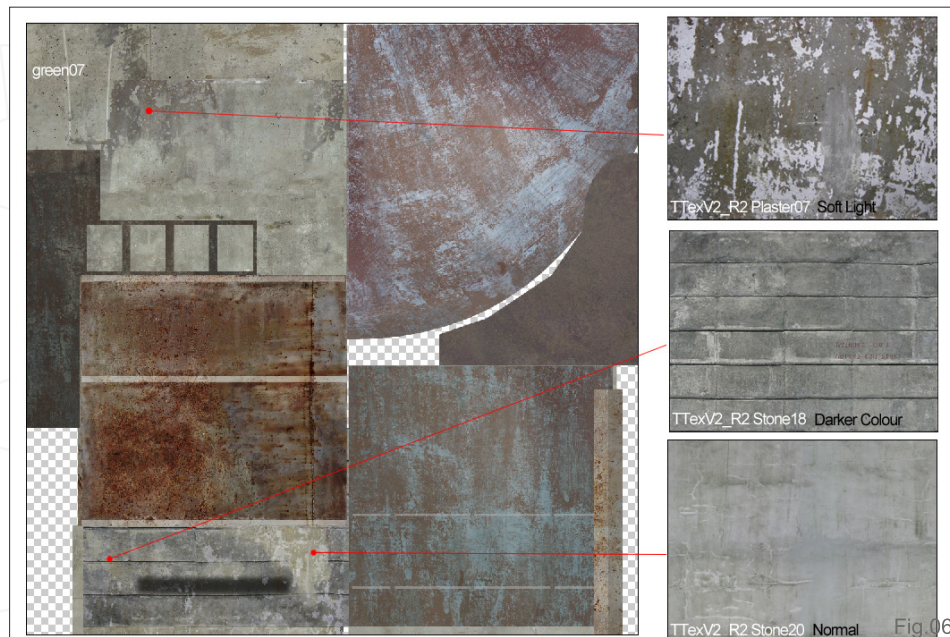


Fig.06



where the dirt maps correspond to the actual model. You can also see that I have added some subtle shadow around the metal panels which help emphasise the geometry a bit more.

## SPECULAR MAPS

**Fig.08** shows the final colour map and you can see how the entire tower has been unwrapped and the texture built up from a number of different images. The numbers correspond with the main areas where dirt and grime have been added, which are usually set at multiply or overlay in Photoshop. Once the diffuse map is complete we can generate the specular map from this, which will then determine the areas of the model that will reflect the most light. A specular map is a greyscale image whereby white denotes a fully reflective area and black represents the opposite. In this case, for example, the untarnished metal panels would be nearer white than the dirt and rust, which would be very dark and possibly black.

The way to create the specular map is to go to the main menu in Photoshop - Select - Colour Range and then use the picker to select the lightest area on your map. Alter the Fuzziness slider to adjust the selection and once you're done, hit OK. Now copy and paste this selection

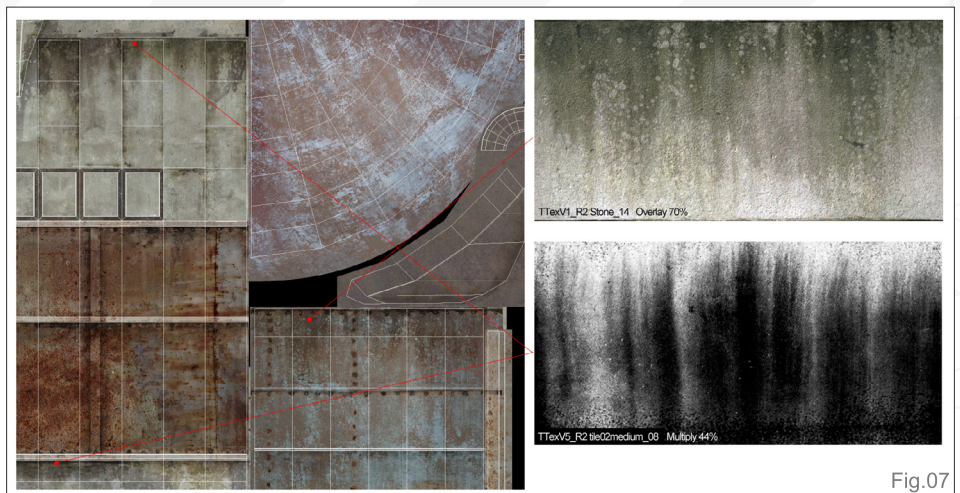


Fig.07



Fig.08

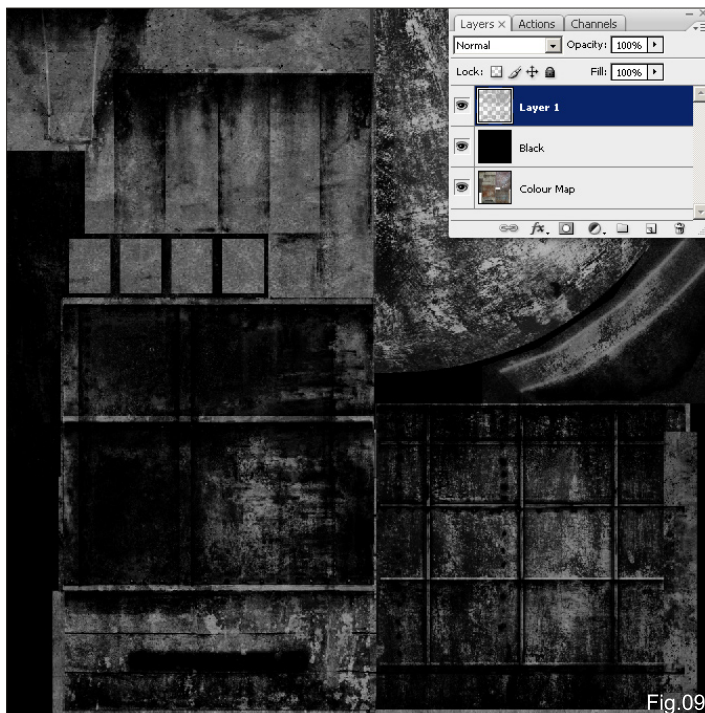


Fig.09

into a new layer and desaturate it (Shift Ctrl+U). Place a black filled layer between this and the original layer and then flatten the PSD and save it as a Grayscale map (**Fig.09**).

The other method would be to preserve all the layers from your colour map and then desaturate each of them. Each layer could then have the specular areas extracted individually and the dirt maps could be placed on top and set to multiply so they appear black, but this is personal preference in the end.

## COMPOSITE MAPS

This has been one way of texturing geometry and is effective when you need to localise specific details on a model and wish to have complete control over every area. However there is another very useful technique which is perfectly suited to the large wall. Assign a material to the wall and then click on the Diffuse map button and choose Composite from the browser. Now click on this map and a dialogue box will appear as shown on the right in **Fig.10**. Here you can add numerous maps and control their



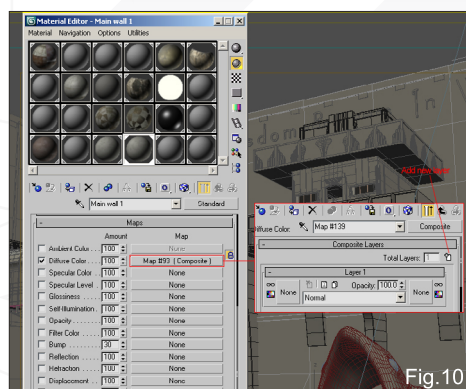


Fig.10

blending modes in a similar way to Photoshop. You can apply a map by clicking on the left swatch and a mask may be added in the right column (Fig.11). When you apply the maps you have access to the usual parameters, including the coordinates, which is important. You can tile small maps numerous times to get the correct resolution and then use a mask to blend between them to create the impression of a much larger scale texture.

In this instance the base layer has been tiled by 3.0 and the grime layer above by 6.0. Because the mask is greyscale, it has a smaller file size and so can effectively be much bigger and hence does not need to be tiled. The dark green areas are representative of the grime layer set to Hard Light and the pattern they form on the wall is controlled by the mask on the opposite side. This image shows the two bottom-most layers, but in Fig.12 you can see the final wall which consists of six layers altogether, including five masks and a number of blending

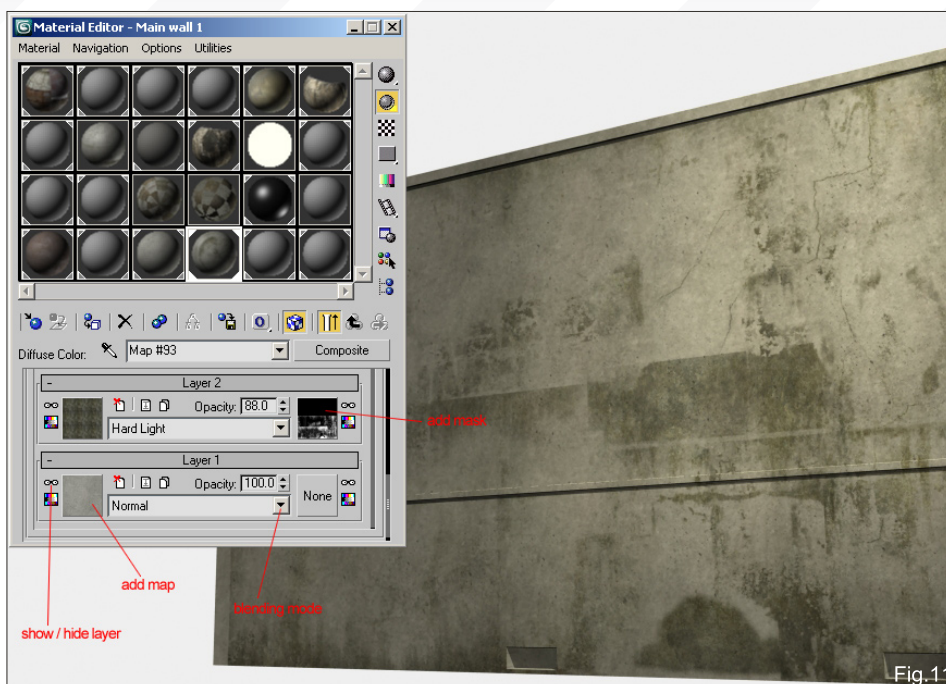


Fig.11

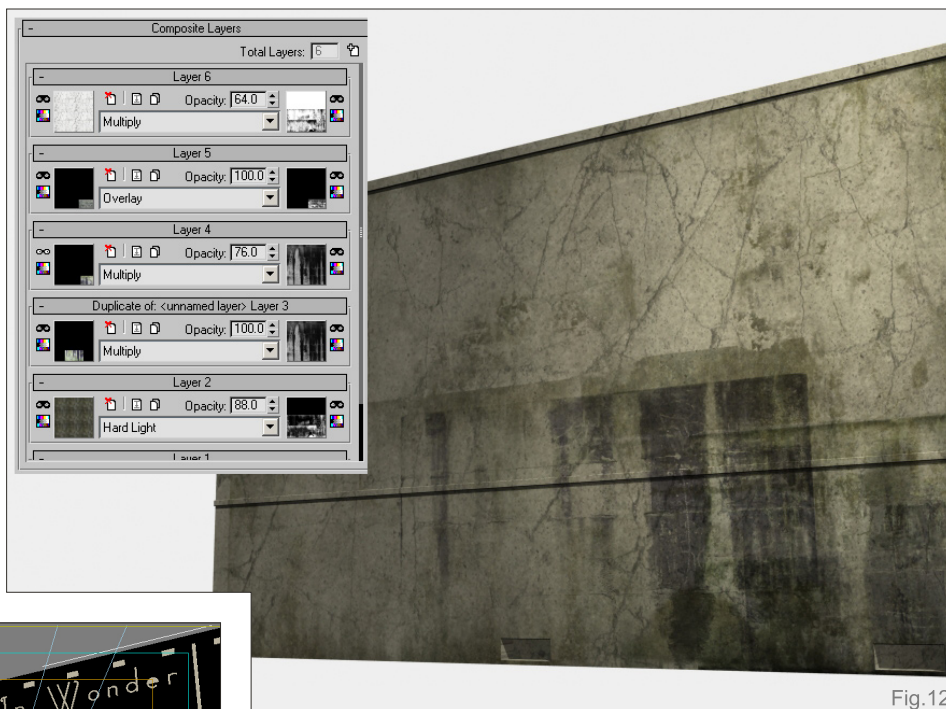


Fig.12

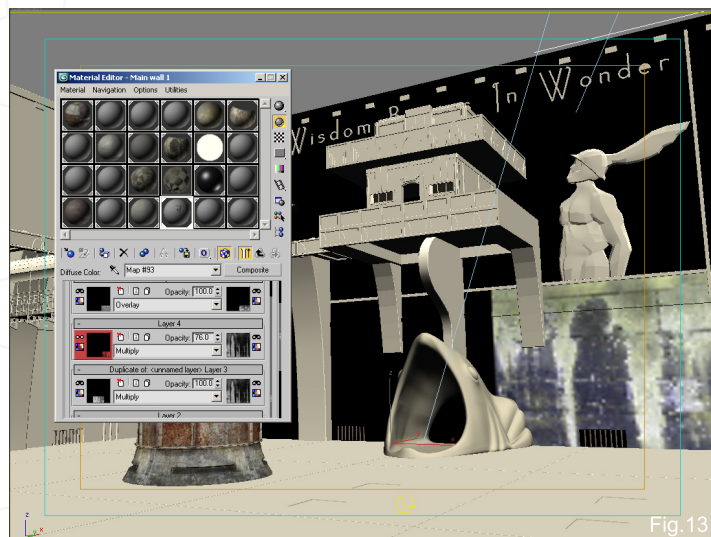


Fig.13

modes. Many share different coordinates, as can be seen in Fig.13. The highlighted layer has had the offset and tiling coordinates altered so that it only covers the space evident on the wall.

## BUMP AND NORMAL MAPS

Once the wall is complete it is time to add a bump map, and because it takes up such a large area, a normal map will also be of benefit.

To load a normal map, click on the Bump map slot and choose Normal Bump from the browser. This will bring up two slots, the top one of which is where the normal map goes (Fig.14). You can see that a standard



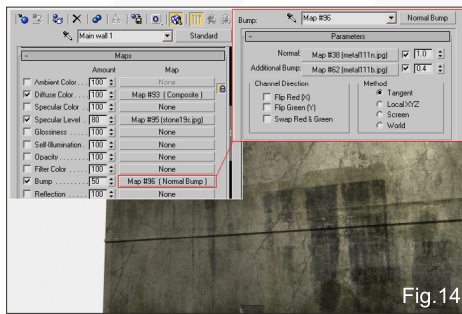


Fig.14

bump map has been placed below this to further enhance the effect. A normal map can be generated using Nvidia's free normal map filter available for Photoshop, but it is best to create it from an existing bump map.

The way to create a bump map is to first desaturate the colour map and then go to Filter-Other-High Pass (**Fig.15**). This essentially removes low frequency detail, but preserves edges with a high contrast. You may also need to manually select and adjust the brightness / contrast on certain areas using the magic wand or colour range picker on more subtle maps. Bump maps are greyscale maps used purely to show depth and volume on an image, and the darker the area, the deeper the depression or distance from the camera. Therefore think of the bump map in terms of planes, and not in colour or detail.

Once the bump map has been created, you can then use this to create the normal map - but be sure to convert the greyscale map back to RGB beforehand, as normal maps are not greyscale. Bump, specular and normal maps are intrinsically related to the colour map, which always comes first. Use the colour map to generate the others and use the bump to create the normal map. But because the wall uses a composite map it is an exception to the rule and it affords more freedom when deciding on the supporting maps. The normal map I have used

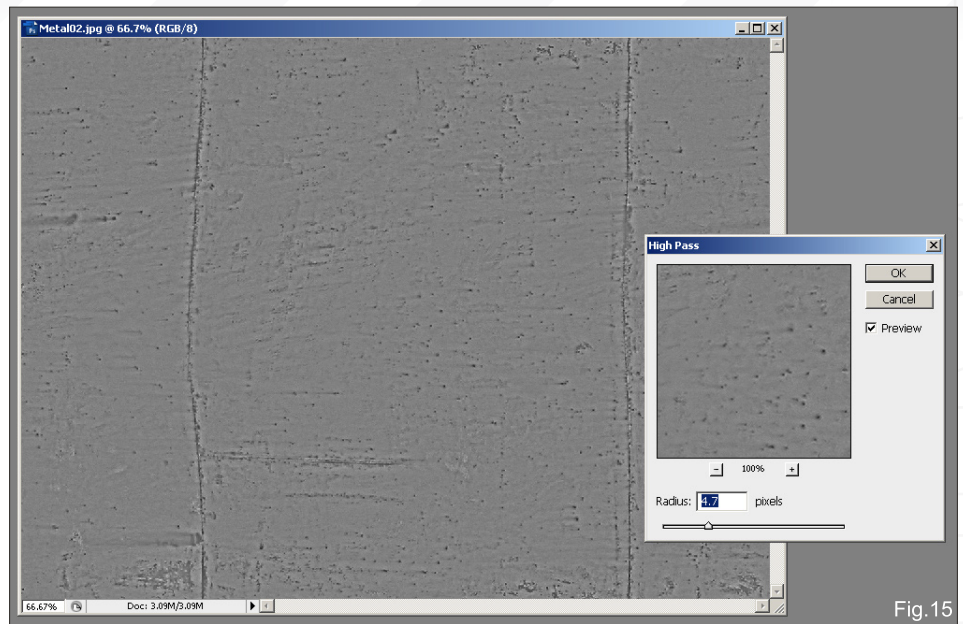


Fig.15

on the large wall corresponds to the image in **Fig.15**, which is in fact an image of metal. However this creates the impression of large cracks and dents, which is effective in the final scene and so can be used in this case (**Fig.16**).

This outlines the key approaches and techniques to texturing the scene as a whole, and I hope that by looking at two different methods you will have gained an insight into the process. The principles covered on the tower and wall apply equally to the remaining components in the scene.

In the next and final tutorial we will go on to deal with lighting and rendering, and also look at how we can render out a few different passes to be composited in Photoshop.

## AGED & WEATHERED ENVIRONMENT

### CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER

#### PART 5: TEXTURING PRINCIPLES

RICHARD TILBURY

For more from this artist visit:  
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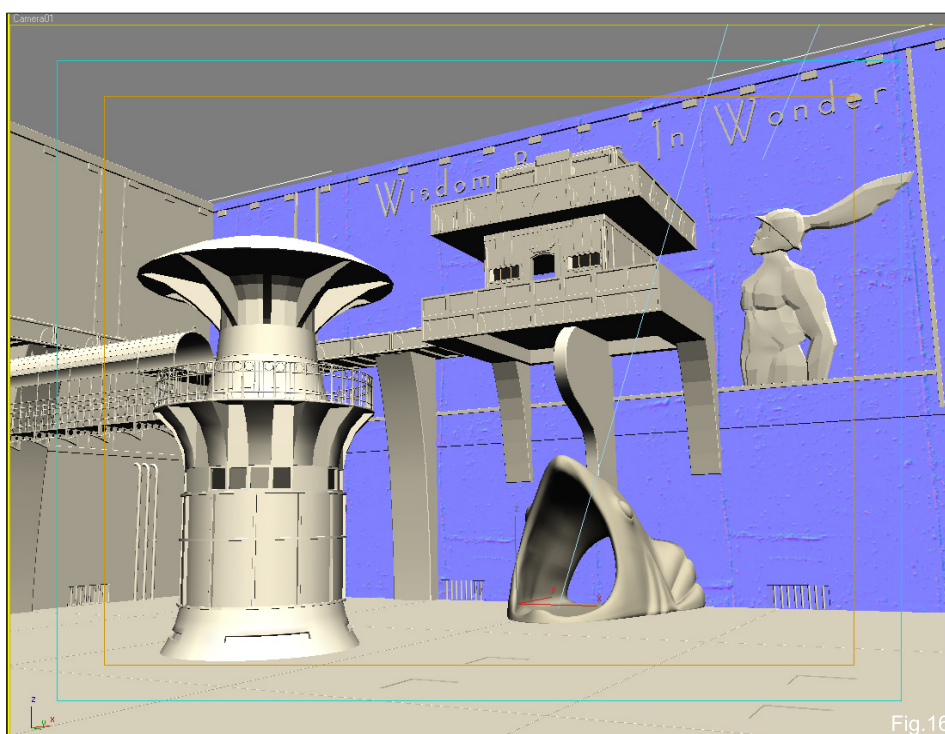


Fig.16



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Issue 039 November 2008



First of all, you need to download a plug-in for Photoshop which generates a normal map from images. This plug-in is developed by Nvidia and you can find it at this link: [http://developer.nvidia.com/object/photoshop\\_dds\\_plugins.html#downloads](http://developer.nvidia.com/object/photoshop_dds_plugins.html#downloads) Install the plug-in and open the file that we've used in the bump channel, "metal111b", with Photoshop.

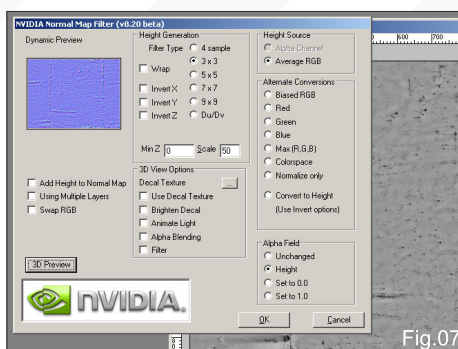


Fig.07

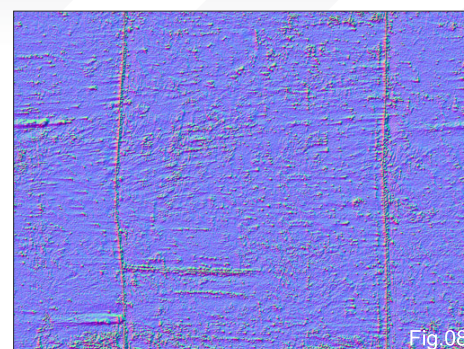


Fig.08

Check if the file is an RGB image. If not, convert it by selecting Image > Mode > RGB Color as seen in Fig.05.

Then go into the Filter menu and select NVIDIA Tools > NormalMapFilter (Fig.06).

The dialogue box that appears is the control panel to create normal maps from height data. The height can come from the alpha or colour channels; in our case we don't have the alpha channel, so we will use the data from the colour channel. Fig.07 shows the NVIDIA Normal Map Filter panel.

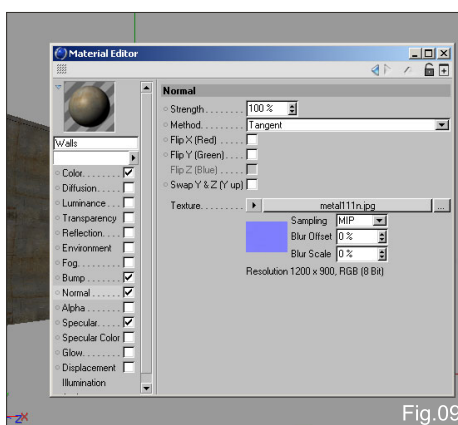


Fig.09

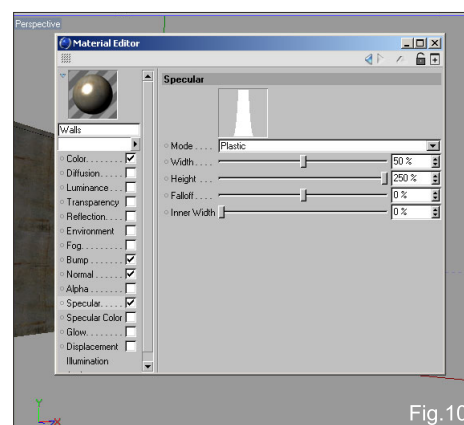


Fig.10

The normals are created by using adjacent texels (texture pixel). You can specify how many to use in the Height Generation area. The Scale parameter defines how much to scale the height values. In Fig.08 you can see the normal map ready to be used.

Coming back to our scene, load the texture called "metal111n" (from V2:R2) in the normal channel, as seen in Fig.09.

As you can see from the figure, we have various parameters in the normal control panel. Strength is the strength of normal mapping. There are also three different methods with which normal maps can be defined: Tangent, Object and World. They differ in the coordinate systems by which the normals are measured and stored. Flip X, Flip Y, Flip Z, Swap Y & Z - these settings let you switch all colour components. The most common method used is Tangent, where the normal orientation is defined with respect to the underlying surface.

We now want to modify the specular of the texture, so go into the specular channel, set the width to 50% and the height to 250% (Fig.10).

Activate the specular colour channel. We can use the layer shader for this channel. So use texture "hungary4s" in the base channel and texture "metal111s" in the blend channel. Choose Screen mode for blending. Then choose Mix Mode Multiply, as seen in Fig.11.

The Mix Mode parameter allows you to mix the colour and textures panes. The Mix Strength parameter defines the mixing proportion between the texture and colour panes.

Let's make a render to see how the walls are coming out. (I will put an omni light into the scene just so that I can see the effects that aren't visible without a light source) (Fig.12).

Still working on the walls, create a new material (that I'm going to rename "dirt up") and apply it to the wall objects. This new material will contain a dirty map and it will be mixed with the other one we've just done. The blending of the two materials will be done through the alpha channel. In the colour channel, load the texture "stone\_14" from the V1:R1 "General Textures" collection. Here is a preview of the texture (Fig.13).

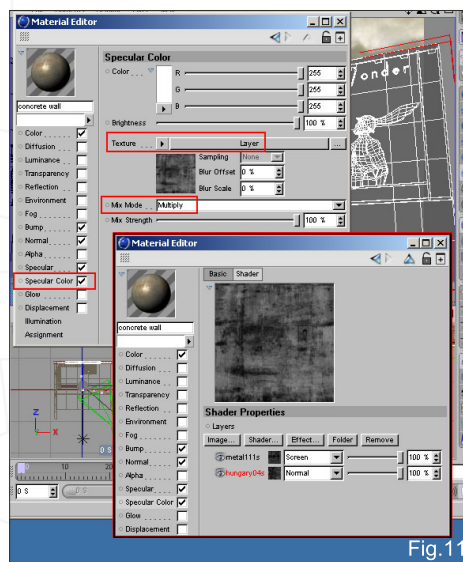


Fig.11



Fig.12



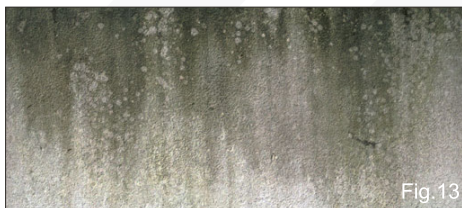


Fig.13

Go now into the object manager and select the texture tag of the wall object. In its properties, change the value of the tiles, bring it to two for both lengths. Then enable the seamless option. This will allow you to flip the part of the texture that will be repeated in order to make the seams invisible (Fig.14).

The seamless option leads to a butterfly effect in the pattern, but don't worry about that - this part of the texture will be hidden. Open the editor of the wall material again, enable the bump channel and then load the texture "tile02medium10" from the **V5:R2 "Dirt & Graffiti"** collection (Fig.15).

Still in the bump channel, set the value of Strength to -10%. Activate the alpha channel and use the texture "tile02medium10" as shown in Fig.16.

An alpha channel enables you to use an image to mask out areas of the material that effectively become nonexistent, so that any underlying materials or objects show through. On the right

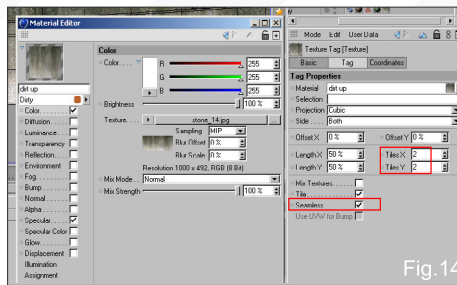


Fig.14

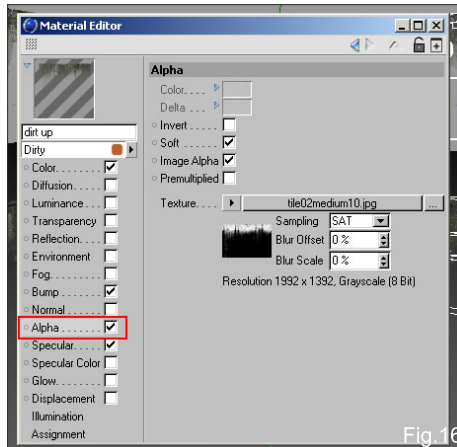


Fig.16

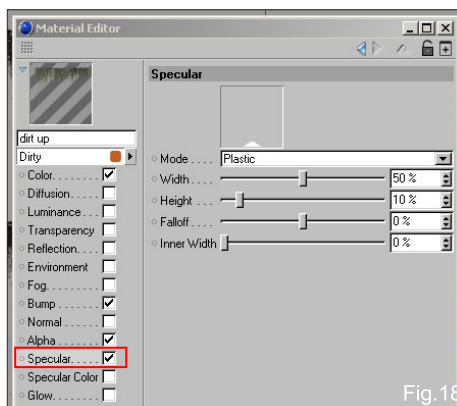


Fig.18

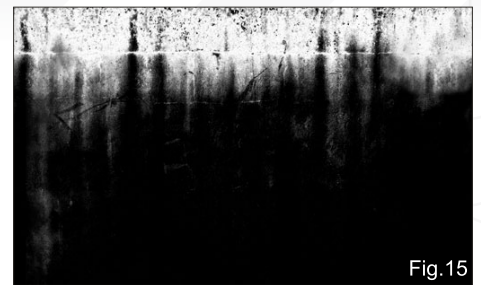


Fig.15

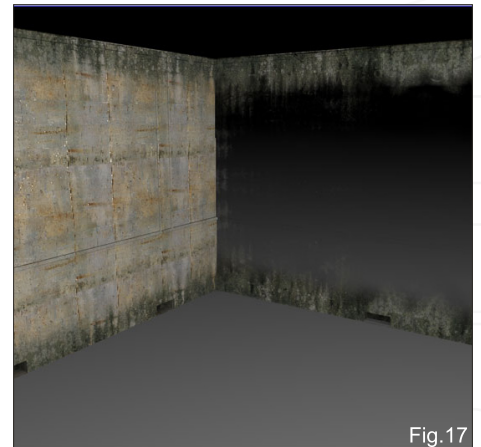


Fig.17

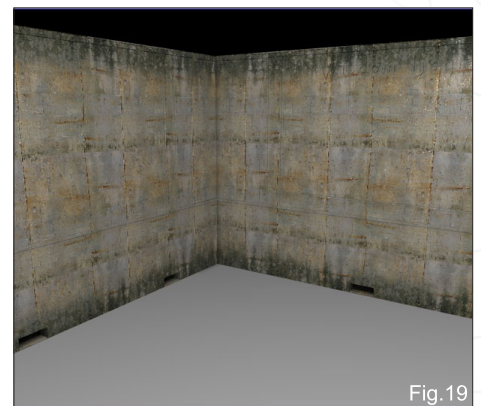


Fig.19



Fig.20

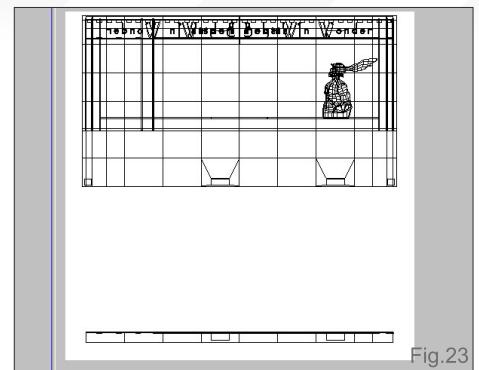
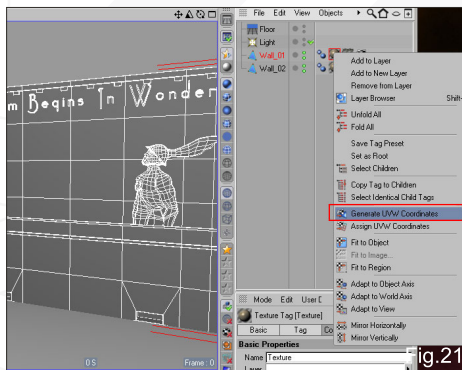
of Fig.17, you can see the wall with only the "dirt up" material, while on the left of figure you can see the blend between the material "concrete wall" and the material "dirt up".

Now adjust the specular channel settings; set the width to 50% and the height to 10%, as seen in Fig.18.

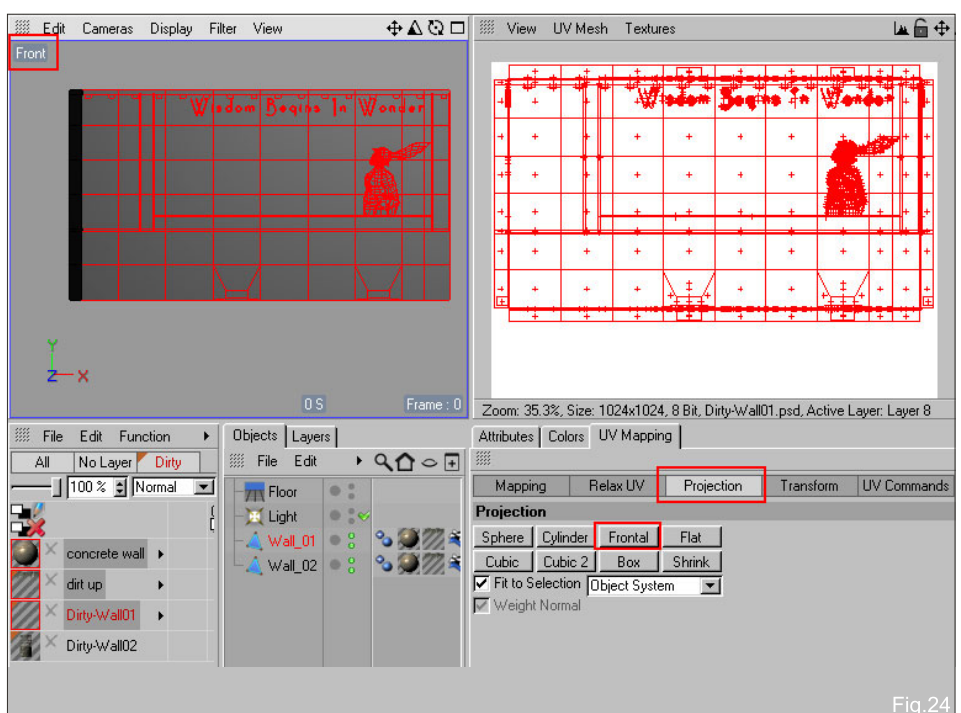
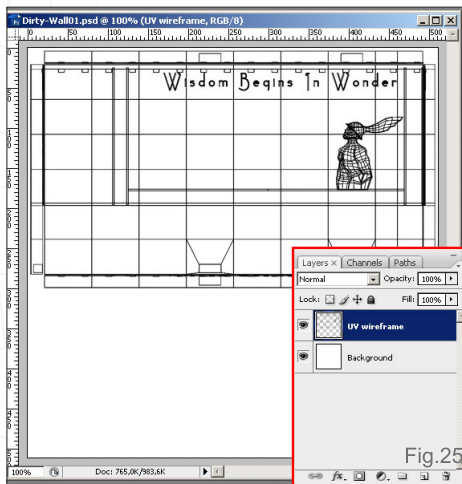
Enable the specular colour channel and load the texture file that we used for the bump and alpha maps. Fig.19 shows a render of the walls.

Fig.20 shows a render of the whole scene using just the "dirt up" map.





Let us review the situation. With these two materials, we have a base colour and a map of dirt that acts on the top and on the bottom of the wall. Now all that's left to do is to make another map of dirt that will act on the whole surface of the wall, especially on details like the external or internal extrusions, the text and decorations. We will draw this map with Photoshop. The first step is to create the wireframe texture template for export into Photoshop. Go to Object Manager and select one of the two texture tags of the wall object, then generate the UVW coordinates by choosing this command from the context menu (right click > Generate UVW Coordinates) as seen in **Fig.21**.



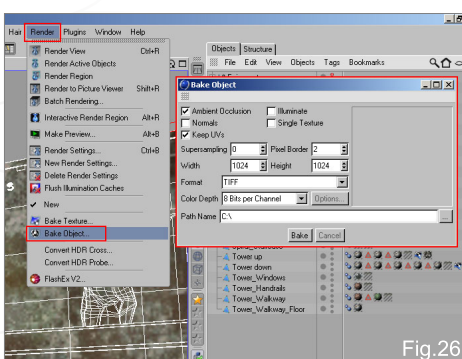
Create a new material: in the colour channel, load the texture “overlay03” from **V1:R2 “General Textures”** (Fig.22).

The bump, alpha and specular colour channels will use the texture that we are going to create. As we did in the first part of the texturing session, create a new texture in Photoshop or in C4D and save it as a “PSD” file. I will call this texture “Dirty-Wall01”. In Cinema 4D, load this new texture into one of the channels stated above (for example, load it in the bump channel). Go into the BP UV Edit layout. Now go to the material manager, select the “Dirty-Wall01” material and choose the command Load Textures from the context menu (right click > Load Textures). The texture will appear in Texture View, where the UVW values of the object are also shown (Fig.23).

In **Fig.23** you can see the coordinates generated by the cubic projection. Select the frontal faces of the wall object and apply a new projection: choose Frontal from the projection panel, as shown in **Fig.24**.

Impress the UV mesh on a new texture's layer that you've added, then save the texture and open it in Photoshop. The procedure to create the wireframe texture template is described in the previous chapter. Opening the file in Photoshop, you will notice that you have two layers, one is the background and the other is the UV wireframe (Fig.25).

Now we are ready to draw the dirty map. The first step is to identify the areas of dirt, and we can do that in Cinema 4D by using the Bake Object command. This command allows you





to create a bitmap of anything that effects an object's shading, including shaders, texture, lights and shadows. You can find this command in the render menu. Select the wall from the object manager and then select Bake Object from the render menu. Once you've opened the Bake Object window, set the following parameters: enable "Ambient Occlusion" (we will use this technique to get the dirt on the wall; colour channels and AO will be baked to two separate textures); enable "Keep UVs", (the UV mesh will not change); set the width and the height of the texture; choose the format you wish to save the file; choose the path to which the baked textures will be saved (**Fig.26**).

Click on the Bake button and the calculation will begin - it will take less than two minutes. As I said before, this process will generate two textures, but we will use only the AO texture. In **Fig.27** you can see the AO texture.

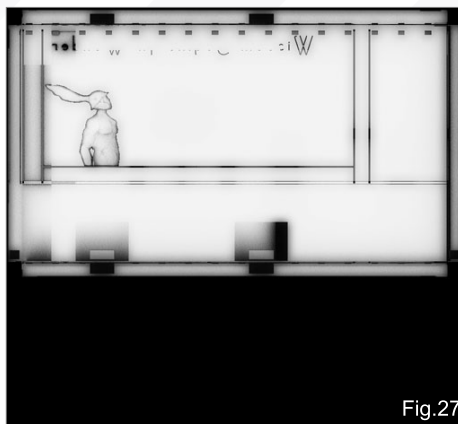


Fig.27

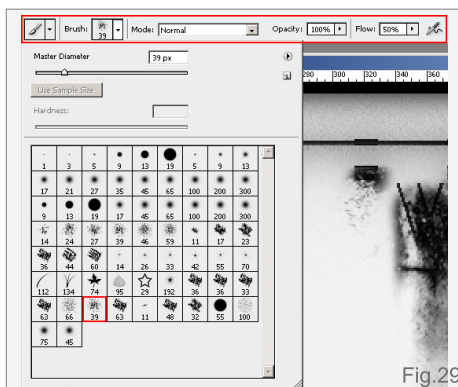


Fig.29

Import this file into Photoshop, then copy the layer with AO into the file "Dirty-Wall01". So now we have a base that we will use as guideline to draw the dirt. Add a new layer and start to draw the dirt.

I used the Brush tool to simulate the dirt of the holes on the top of the wall. The colour used is black. **Fig.28** it shows the type of the brush used; its diameter and the other settings are highlighted in red.

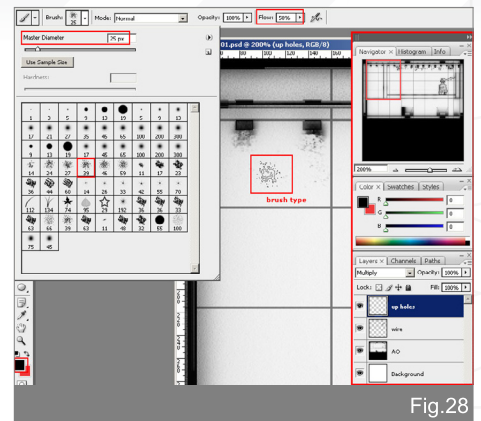


Fig.28



Fig.30

Onto another layer, I drew the dirt in the area of the text "Wisdom Begins in Wonder" by using the brush tool, as shown in **Fig.29**.

Set the colours in the following way: for the foreground colour choose black, while for the background colour use a light grey (R=168; G=168; B=168). Trace the brushstrokes vertically from top to bottom, intensifying your strokes in the text area (**Fig.30**).

Now select the Eraser tool, choose the Soft Round 45 pixel and set Opacity and Flow to 50%. Use this tool to refine the bottom of the dirt, as shown in **Fig.31**.

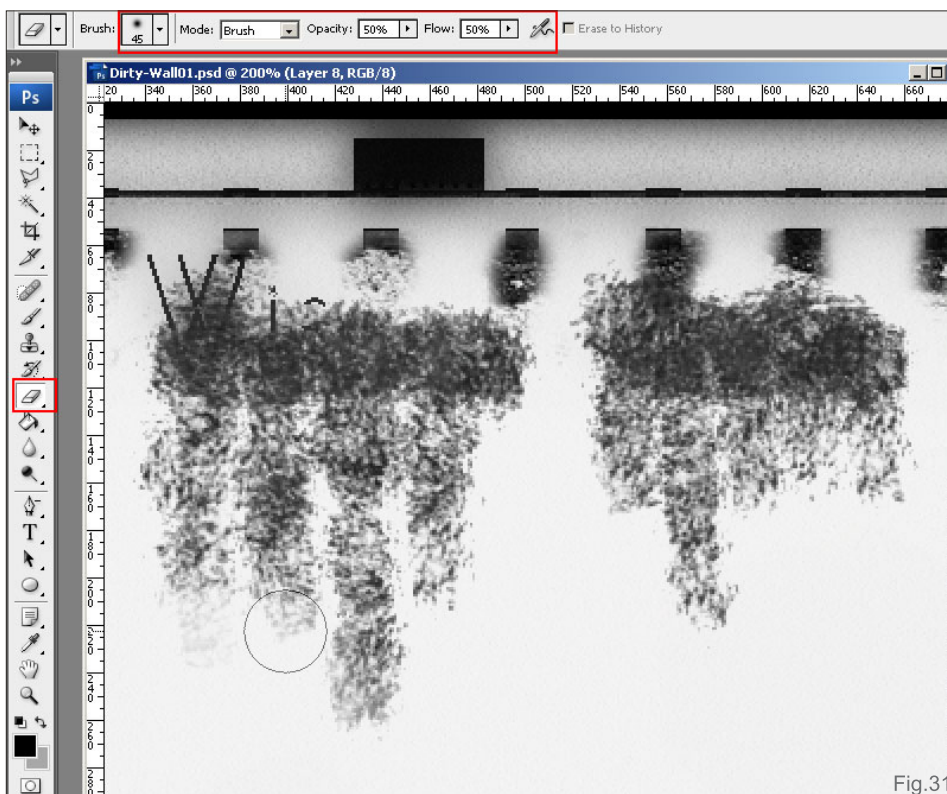


Fig.31

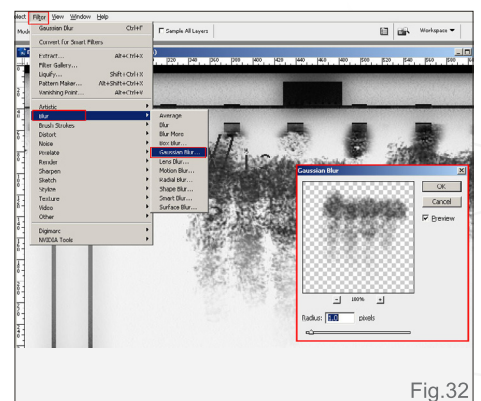


Fig.32



Once you've finished, use the Gaussian Blur Filter to draw the dirt on the text (Fig.32).

Duplicate the layer and apply the Motion Blur Filter to the copy (Fig.33).

Change the default blending mode to Multiply and merge the two layers. Continue to refine this part of texture, adding details (Fig.34).

Use the same procedure to finish the texture and the result should be similar to what you can see in Fig.35.

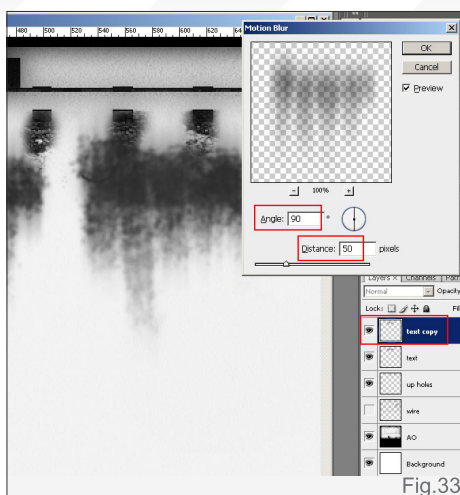


Fig.34

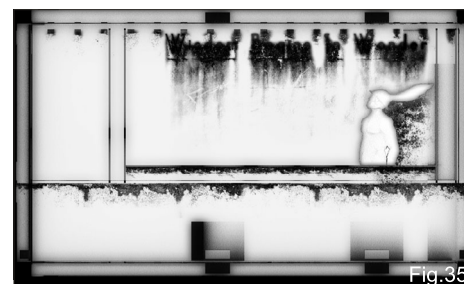


Fig.35

Now to complete the texture, return to Cinema 4D, go into BP UV Edit layout and then load the texture. Bodypaint 3D, like Photoshop, is an editor of images; you can draw in real time directly onto models. Its technology is based on Raybrush and can be used to add variety in colour, transparency, roughness, brightness and spread to a texture. BP 3D is also compatible with Photoshop plug-ins. The BP 3D interface is shown in Fig.36.

From this figure you can see the Paint Tools (on the left of figure), which you can also find in the main menu > Tools > Paint Tools. You also have the filters that you can apply to images and a variety of brushes for drawing your textures.

Now add a new layer, select the brush tool, go into its properties and change the preset by choosing one from the Brush Preset menu. Still in the properties of the brush tool, also change the size and the pressure, as shown in Fig.37.

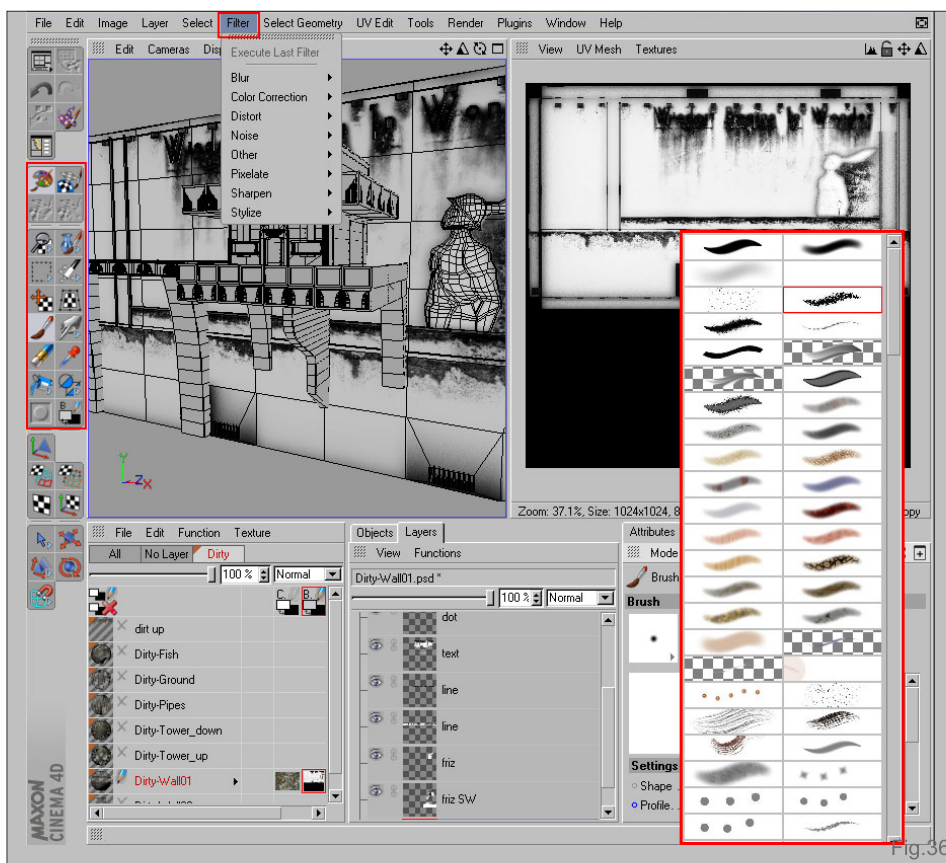


Fig.36

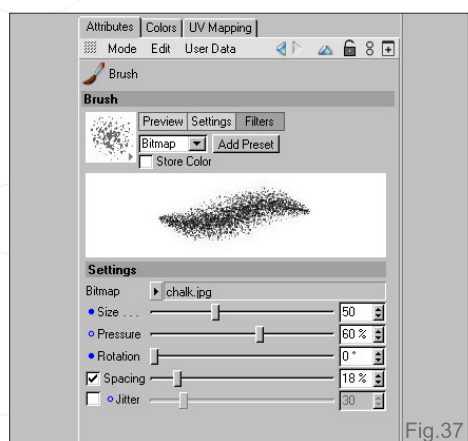


Fig.37

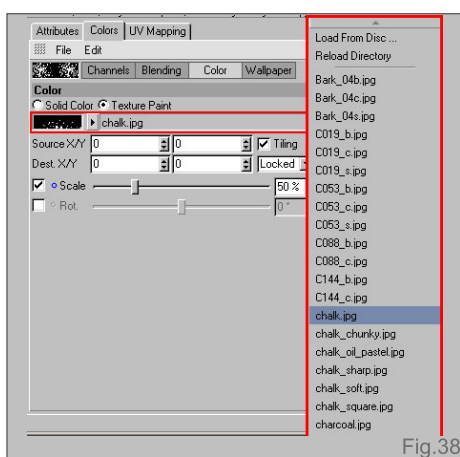


Fig.38

This brush uses a bitmap as colour (Texture Paint); you may change its colour by choosing one from the menu or you can use a Solid Color, as seen in Fig.38.

Now we are going to draw the dirt between the wall and the balcony. So paint on the wall object directly from a 3D view, as shown in Fig.39.

Use this procedure to refine the texture and add details. The result should be similar to the image shown in Fig.40.



Once you've finished painting the texture, load it in the following channels: Bump, Alpha and Specular Colour (**Fig.41**).

Use the same procedures to complete the whole scene. In **Fig.42** you can see a render of the dirty map we have just done.

Other textures I have used in the scene are: "metal19" from **V2:R2** for the tower handrails object; "metal111" from **V2:R2** for the ground of the tower walkway and "green01" from **V3:R2** "**Bases & Layers**" for the roof of the tower walkway (**Fig.43**).

The second part of the session "Texturing the Scene" ends here. In the next part of the tutorial we will look at how to illuminate our scene, the rendering settings and the post production.

## AGED & WEATHERED ENVIRONMENT

### CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER

#### PART 5: TEXTURING PRINCIPLES

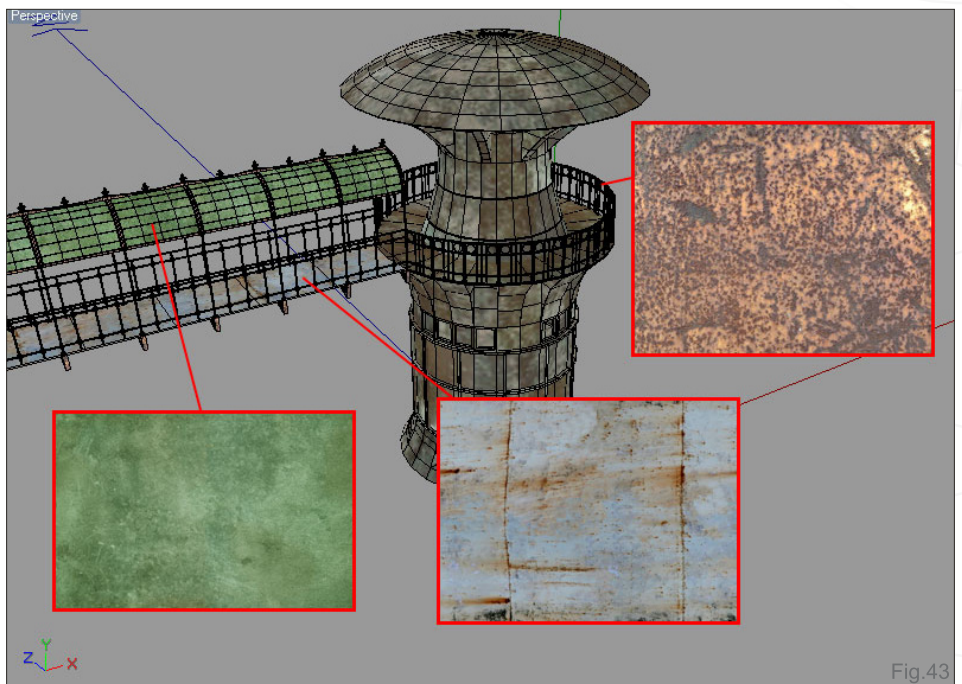
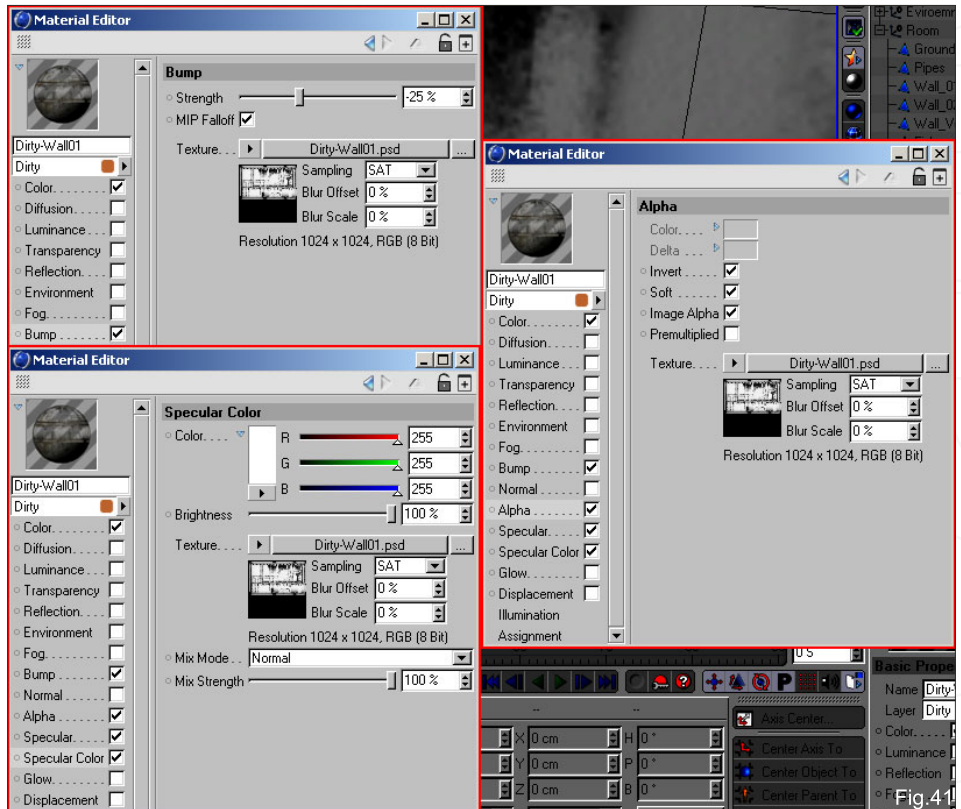
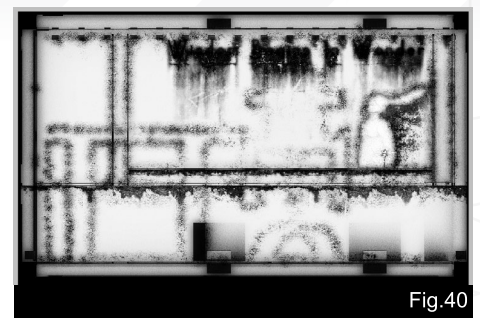
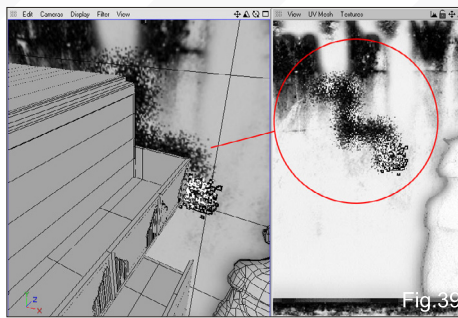
NIKI BARTUCCI & GIUSEPPE GUGLIEMUCCI (A.K.A. PIKO)

For more from this artist visit:

[www.pikoandniki.com](http://www.pikoandniki.com)

Or contact them:

[niki@pikoandniki.com](mailto:niki@pikoandniki.com)





# CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER

This series will run over the next six months and will endeavour to give you an insight into how a fully realised 3D scene may be arrived at from beginning to end. The tutorials will attempt to address the key issues and techniques appropriate in achieving this, from concept sketches through to building the 3D scene, mapping and unwrapping, texturing and eventually to lighting and rendering, culminating in a final render. The emphasis over the course of the series will be on the texturing, which will be covered in two of the six instalments, and principally the aging and wear of materials.

The schedule is as follows:

**Issue 037 September 2008**

## PART 1: IMPORTANCE OF REFERENCE

The series will begin with a look at the gathering and importance of reference material, and then transposing these into some concept sketches and a concept / production painting.

**Issue 037 September 2008**

## PART 2: MODELLING OVERVIEW

This chapter will go on to deal with a general modelling overview, which will be non-software specific, and then follow with a look at Photoshop and some general preparation of textures.

**Issue 038 October 2008**

## PART 3: PREPARING THE TEXTURES

This chapter will focus on Photoshop and more specifically, the job of preparing textures, including painting out seams and making images tileable.

**Issue 040 December 2008**

## PART 4: MAPPING

This chapter will focus on the mapping and unwrapping of your scene

**Issue 040 December 2008**

## PART 5: TEXTURING PRINCIPLES

This chapter will focus on texturing principles and will cover texture resolution, bump specular and normal maps along with combining textures. It will also cover using masks and adding dirt and grime

**Issue 041 January 2009**

## PART 6: LIGHTING & RENDERING

The final chapter will discuss lighting and rendering techniques and show how a simple lighting rig can be set up, along with different render passes ready for a final composite in Photoshop.



# AGED & WEATHERED ENVIRONMENT

CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER  
PART 5: TEXTURING PRINCIPLES

In order to follow this tutorial, you should use the latest version of LightWave (9.5). If you are using an older version you should still be able to follow, but some things might work a bit differently. We will also be using Photoshop, but any other image editing software that supports layers will also do.

Open your 3D object in Modeller. All UV maps are in place so we can start to apply our textures. I like to start with the biggest objects first, and work down to the smallest. This way you define an overall look first, and then add the details. So I suggest we start with the big walls and go from there.

We are using the Modeller at this point because we can see a preview of our textures and still directly adjust the UV coordinates if needed. Open up the Surface Editor and select the material, BackWall02 (Fig.01).

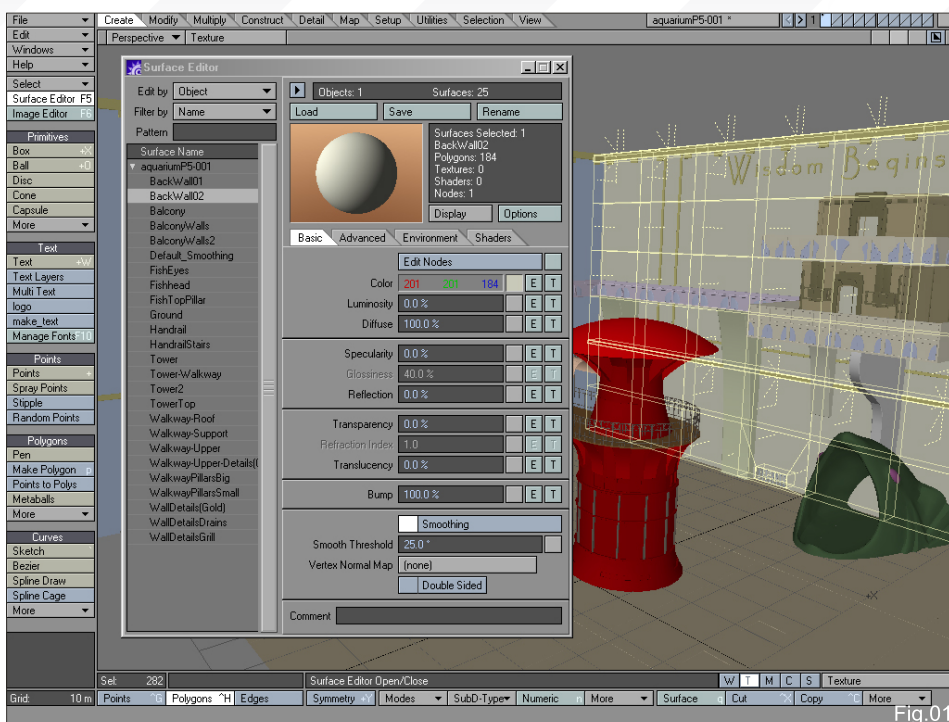


Fig.01

Now search your texture library for a suitable base layer. Choose an image to define the look of this material. I suggest we use a concrete material, like stone19.jpg from the **Total Textures: Volume 2 R2 DVD**.

Load it in the colour channel using the corresponding UV map. Now you should see the texture applied to your wall.

When you now scale the UV map in your UV texture view, you can see the texture change in the perspective view. When you scale the UV texture by 200% for the horizontal value, this means that the image is repeated twice over the surface of the wall. Just keep in mind that the image you are using also has to be repeating seamlessly (Fig.02).

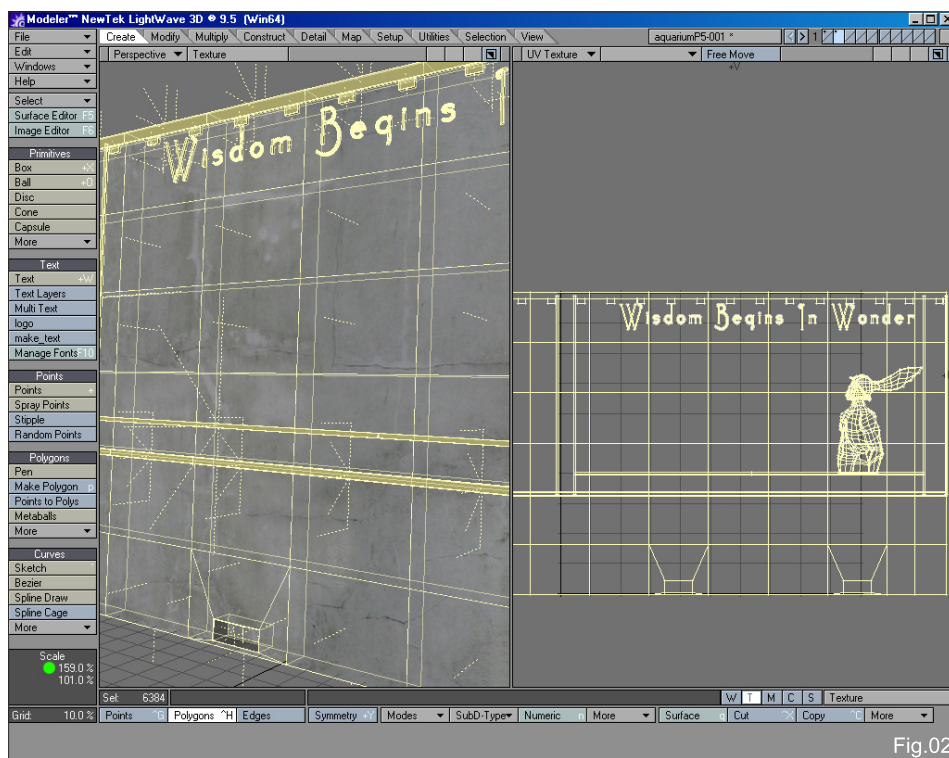
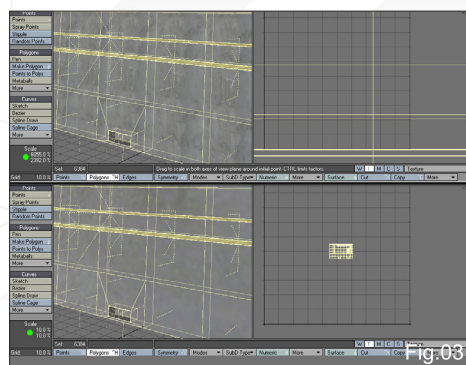


Fig.02

When working with image textures, you need to pay attention to the texture resolution in relation to the final image resolution. For repeatable images this is especially important. If you scale the UV map too small then the texture spans a larger surface, but the texture resolution will get too small. If you scale the UV map up, then the resolution won't be a problem, but visible repeating image maps will be, so you should also try to minimise visible repeating.

**Tip:** If you are unsure about texture resolution, think about the following: What resolution do you want to render your final image? Let's say it's 1920x1080 pixels. As our wall fills a very large part of the final image, the textures you put on the wall should at least have the same resolution. If you apply an image with a lower resolution, you will need to make it repeat more to achieve the same quality (Fig.03).





We choose the base layer here, but we need to add some interesting variations. So let's, for example, try to make the lower edge of the wall somewhat weathered and dirty looking. For this we are going to use an image, similar to the base texture, but with more grime and dirt. A fitting image would be stone\_14 from **Total Textures Volume 1 R2 DVD**.

In order to place it differently onto your model, duplicate the UV map. In the Surface Editor, add another layer and then add the stone\_14 image. Now use the copied UV map for projection (Fig.04).

Move, scale and even rotate the copied UV map to adjust this second texture layer. When you're satisfied with the look of it, save your model and open Layout (keep Modeller open).

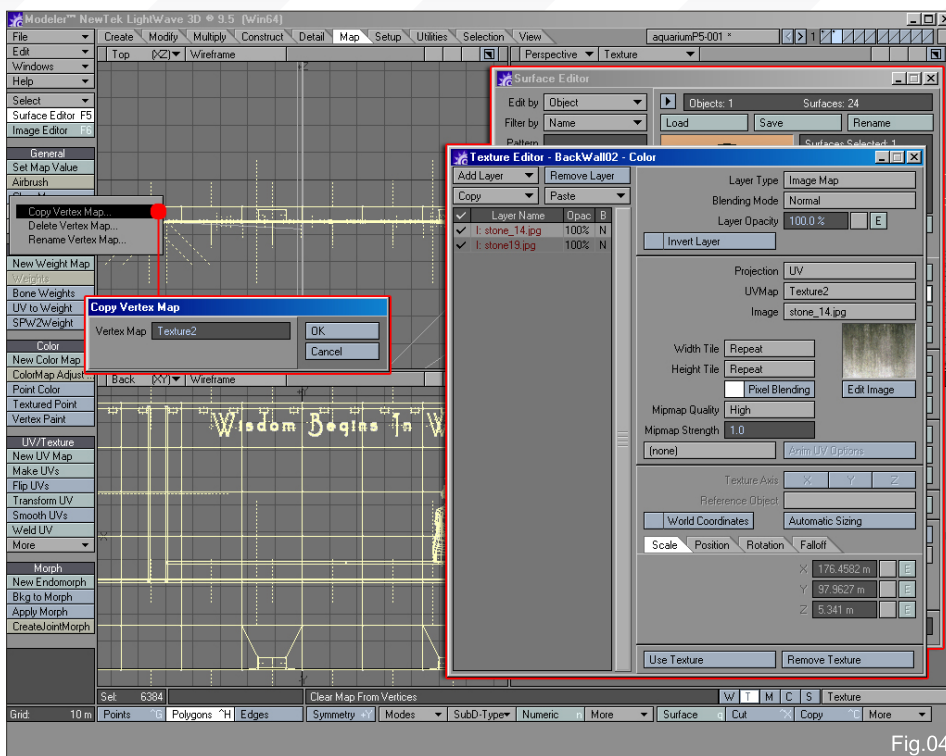


Fig.04

We will now set up a basic scene. This will enable us to work better with the materials we create and also to see where our scene needs more work. Start by adding the aquarium. Now set the resolution of the default camera; I went for 1920x1200 pixels just because the aspect ratio fits the scene pretty well. Move the camera into a position that looks interesting for you. Also place the default light so that it lights all

elements equally. Now, whenever you want to see the changes of your material, you can make a test render by simply pressing F9 on your keyboard.

In my scene, I also enabled background radiosity (default settings) and added the default background gradient. You can also just add a second light with less intensity from another direction to light the other sides of the object. Just keep it simple at this point; this scene only serves for test rendering your materials. In the next part of this tutorial we will go into far more detail about scene creation and rendering (Fig.05).

In Surface Editor go into the colour channel and add another layer: a gradient. This gradient will define where the second layer will be visible.

Set the Blending Mode to Alpha, so that it influences the layer below it. Where the gradient is white, the stone\_14.jpg image will be fully opaque; where the gradient is black, it won't be visible.

Set the input parameter to "Y Distance to Object"; for Object choose the aquarium object

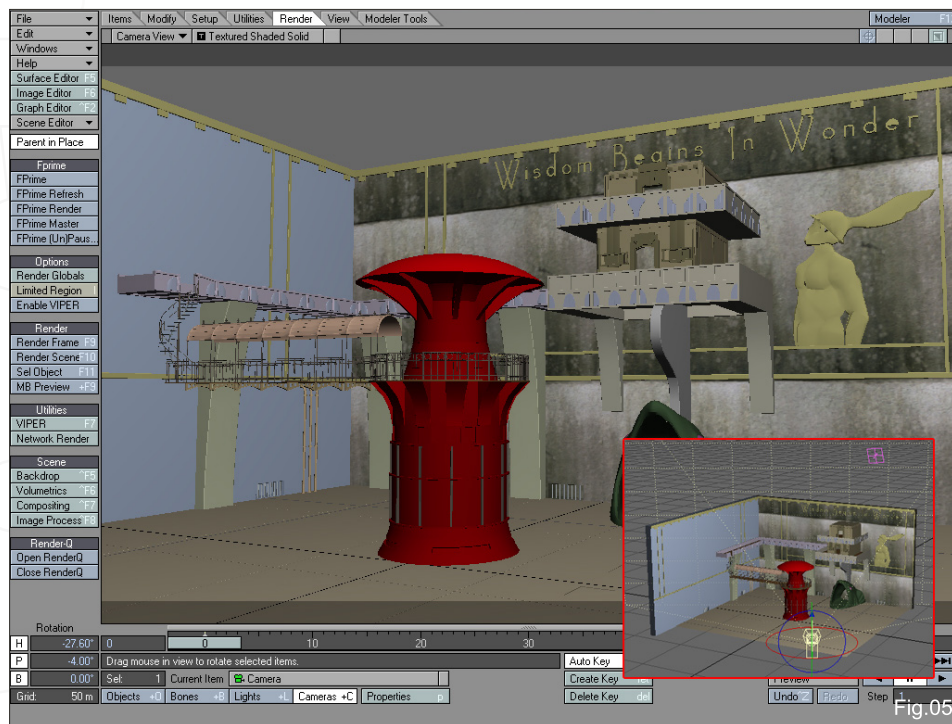


Fig.05



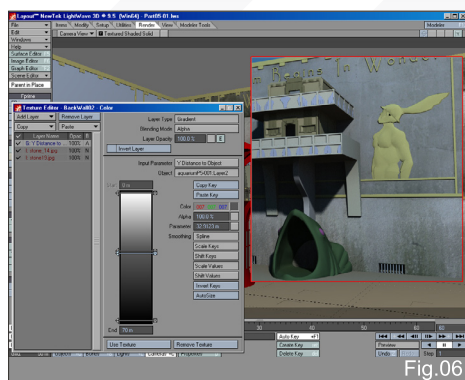


Fig.06

(or the layer containing the wall). Also change the value for the "End" of the gradient – set it to 70m. This way, the top of the gradient is actually the bottom of the wall at 0m, so keep that in mind.

Now add Parameters to the gradient, wherever you want your map to be visible (Fig.06).

**Tip:** If you don't like to work with vertically flipped gradients, you can add a null object and place it at the upper edge of your wall. Use this null as an input object. You might want to set the end parameter of the gradient to negative values as you move down the wall from the null as a start point.

Instead of a gradient, you could also use a procedural texture or another image map as an alpha. Also, you don't always need to add another UV map, use all the projection types that you like – planar, box, sphere. You can also add layers with other blending modes, like multiply or screen.

Have a look at Fig.07. I've added several other layers using various blending modes.

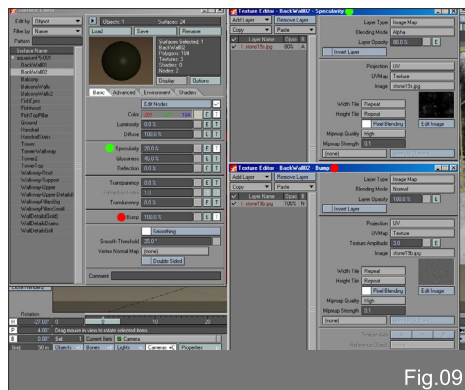


Fig.07

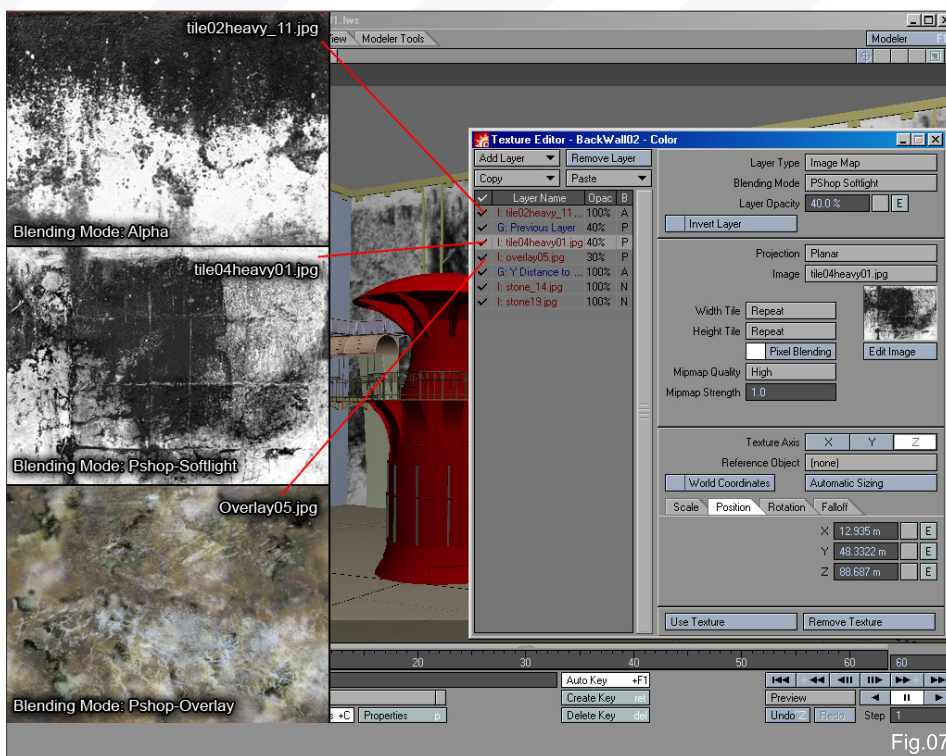


Fig.07

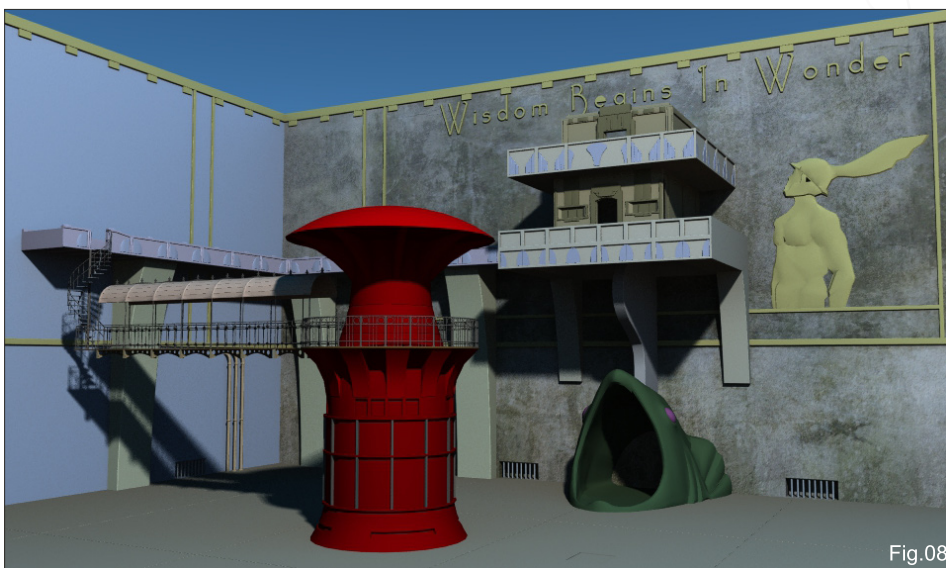


Fig.08

The tile02heavy\_11.jpg works as an alpha for another gradient. It has a greenish colour and is also set to the blending mode, "Pshop-Overlay" (Fig.07).

As you have seen, you can combine many different layers in one material channel. The big advantage is the flexibility: you can enable or disable a certain layer or add another one to bring in variety. Also, you can use the same maps on other materials and just use the blending modes to create fully new materials. The disadvantage is the more complex material

setup. Loading a lot of different image maps also fills your RAM. So if computer resources are a concern, you might want to choose a different technique (Fig.08).

The material is not done with the colour channel. We are going to add a bump channel to give the surface some relief effect. Add the bump map that comes with the concrete base map; choose stone19b.jpg. The white parts of the texture will appear emerged from the surface, while the black parts appear as holes and deep scratches. We'll also add a specular map. Choose the



corresponding map which is included in the texture collection: stone19s.jpg. Set the blending mode to Alpha. This way the specularity can be easily adjusted via the specularity value in the surface settings. The map defines the areas where this value is applied.

In order to take effect, you need to adjust the specularity value to 20%, which is not too shiny. The glossiness can be around the default value. This way the concrete appears slightly wet (Fig.09).

There is one more map from the collection of our concrete base textures, and this is a normal map. It has a similar effect as the bump map, but can be used to create deeper relief effects more convincingly. The normal map often contains the coarser details, while the bump map contains the finer details.

In the Surface Editor, click on Edit Nodes. Add Node > 2D Textures > NormalMap. For the image, choose stone19n.jpg – use the same UV map as in the colour, specularity and bump channel. Via the Amplitude parameter you can make the relief softer or stronger, if you like.

Now connect Normal node output with the Normal surface input (Fig.10).

Keep in mind that, of course, you can add as many textures to any of the material channels as you like. I think the material is alright for now. So on to the next one! (Fig.11)

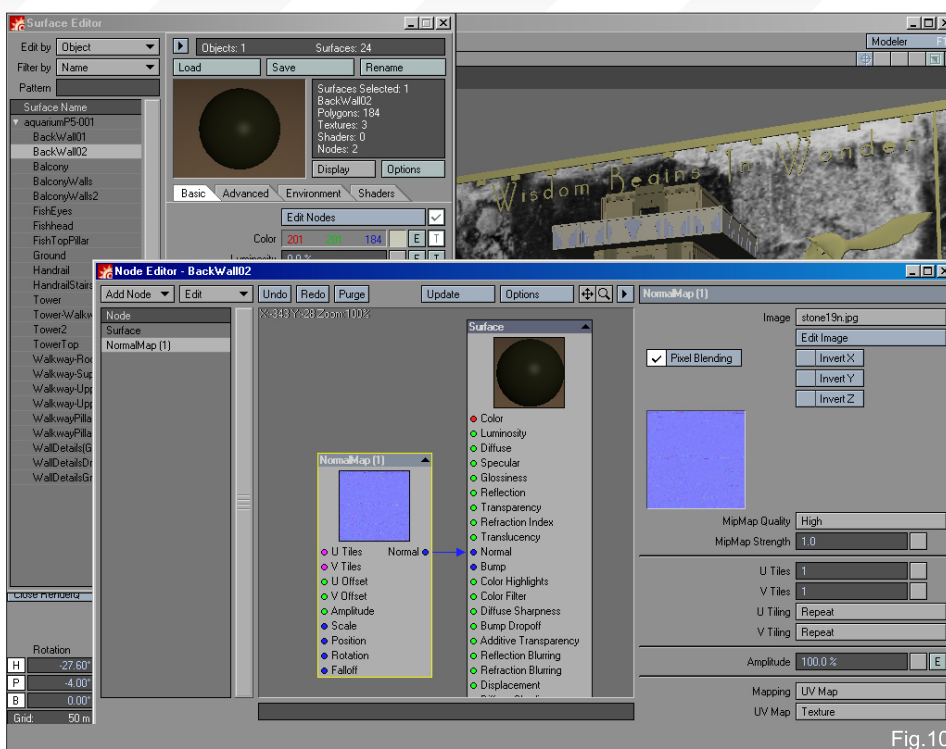


Fig.10



Fig.11

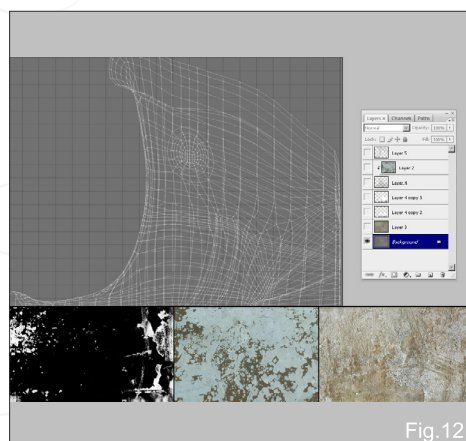


Fig.12

Up to now, we've added the textures right from the collection provided, with the mentioned advantages and disadvantages. On some occasions, however, it might be better just to add a single texture that fits one object specifically. The fish head is a good example of

this. We've already created a UV snapshot of this part of the scene as a Photoshop template. Open this PSD file now.

Set the image size for this image – I suggest choosing a size of 1500x1200 pixels. Now go



through your texture collection and look for images that you'd like to use for the fish. Copy each picture that you like into a separate layer in the fish Photoshop template (**Fig.12**).

I'll select the following image textures:

misc19.jpg – **Total Textures: V2 R2**

tile04light20.jpg – **Total Textures: V5 R2**

metal\_01.jpg – **Total Textures: V2 R2**

**1** - Our fish head texture resolution is a bit bigger than our base layer, misc19.jpg. Since this map is repeatable, you can simply duplicate the image and fill the entire space. Since the image is a bit bright, use Image > Adjustments > Level to change the output levels from 255 to 200 (white to grey) (**1**).

**2** - Use the dirt map (tile04light20.jpg) with blending mode, "Multiply". Scale, copy and move the map so that it's only visible at the lower edge of the fish head. Delete the rest with a wide feathered eraser brush. Copy this layer a second time and place and scale it differently. With a soft eraser brush set to 20% opacity, soften out the hard transitions (**2**).

**3** - Make another layer and paint with a soft brush where you think some erosion would occur on the fish head (**3**).

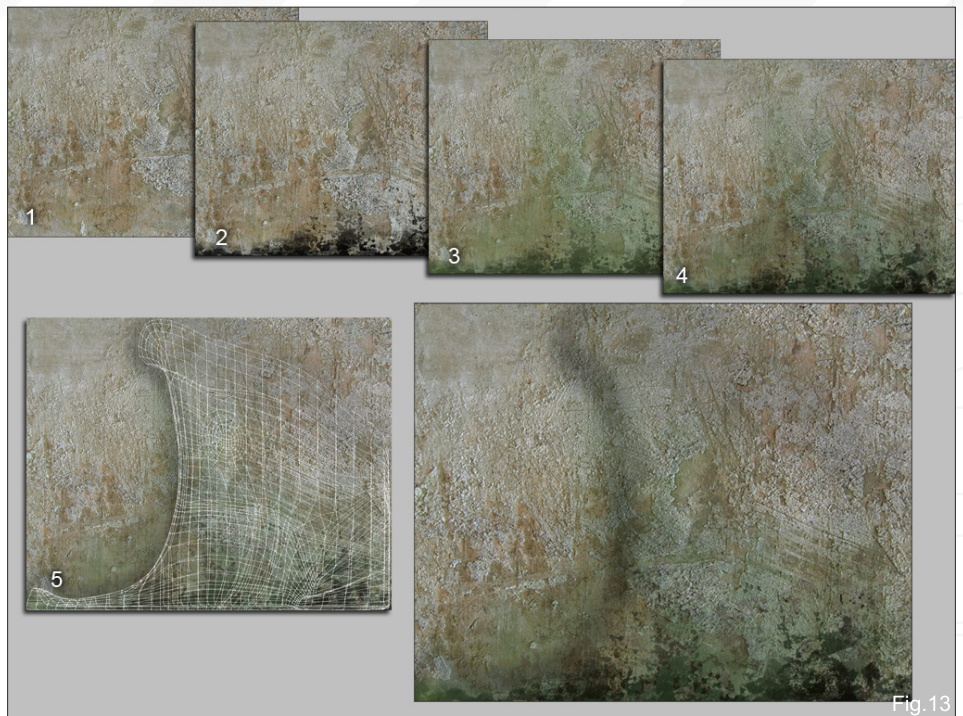


Fig.13

**4** - Now place the metal\_01.jpg layer above the green map you just painted. In the layer menu, right-click on it and select "Create Clipping Mask" – this way the layer is only visible where you painted in step 3 (**Fig.13**).

I then add another layer where I paint with a dark colour over the edges of the fish head.

Don't forget that you can blend over your mesh snapshot at any time for reference. Put it

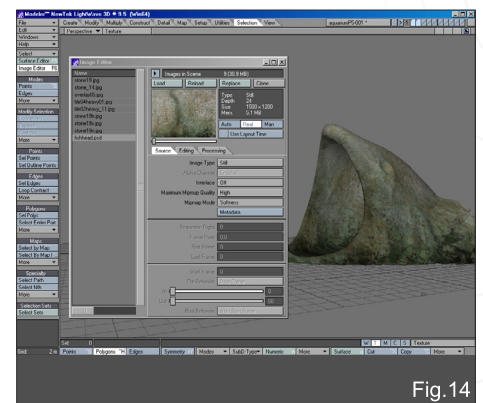


Fig.14

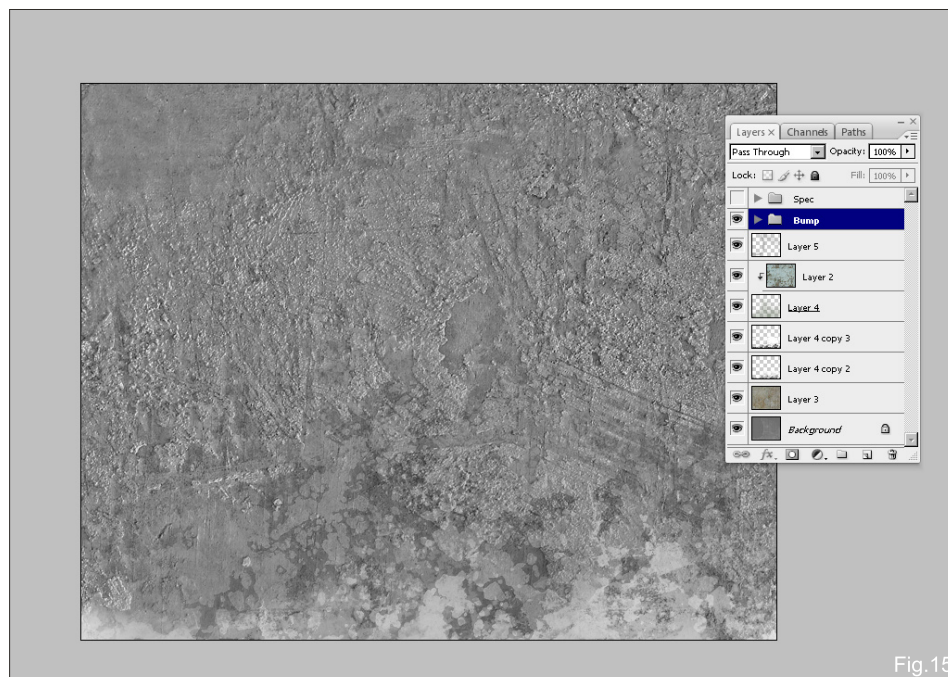


Fig.15

above all other layers, use the Levels again to maximise the contrast, and the blend it via the Screen mode.

In Modeller, add the fish texture you just created to the fish head material colour channel.

You can also use the PSD file of the texture while you're working on it. To check how your image looks, just switch to Modeller. In the Image Editor select the texture and hit reload.

As you have all the texture layers in one PSD file, you also have the full texture visible in OpenGL as it will appear when it is rendered – which is a big advantage over the multiple image layers mixed in the material editor (**Fig.14**).



**Tip:** If you're done with a texture, save it as a separate file in another format. PSDs contain all the layers and are therefore very big – loading these images into RAM can get you into trouble with larger scenes. I prefer JPGs at 100% compression, which works for almost all situations very well.

The texture looks just fine for now, so we can continue with the bump and specular channel. With the layered materials, you could now just take the appropriate texture from the texture collection. For your own texture, you have to create these extra maps manually.

Save a copy of the layered PSD file. You could also work in the same file and copy all layers into another group. Desaturate all layers, but don't merge them. Now you can adjust the brightness and contrast of each layer separately.

For the bump map, keep in mind that dust should not be part of the bump map, only holes, ridges or smaller dents. So you can simply disable layers with dust. Also, not all dark elements should necessarily be dark in the bump map. Try to invert some of these layers;

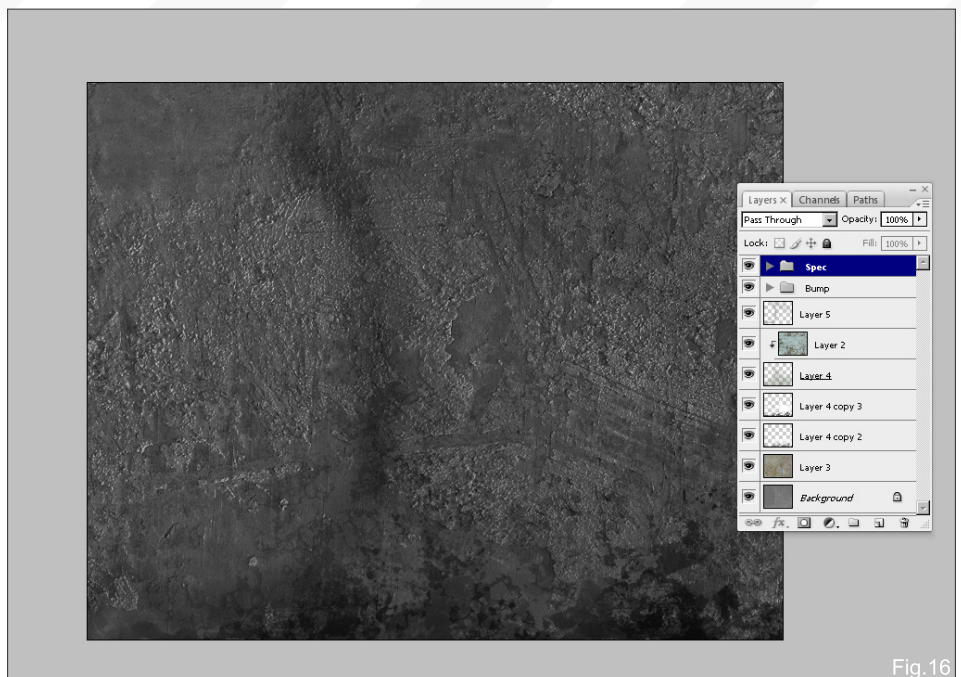


Fig.16

if you have a blending mode using Multiply, just change it to Screen after inverting (**Fig.15**).

For the specular map on the other hand, you need to include dust layers, because dusty surfaces are not shiny. Darker spots usually collect dust and are therefore less shiny.

Usually you don't get too bright with this map. If you use this map directly in your specular

channel, then "full white" would read as "fully shiny" – like a mirror. Of course, as I already explained, you can also use these maps as alpha for the specular channel, and tune the intensity down to less shiny via the specular intensity value (**Fig.16**).

For the material settings I used the same setup as for the wall material – just without the normal map. Colour, specular and bump just use one image map. The layer mixing is done in Photoshop, where you have much better possibilities to blend and paint maps. This is all very flexible and the resulting map is very individual (**Fig.17**).

In your daily texturing routine, both techniques are combined. For example, you take textures and mix them directly in Photoshop, but you don't always create them for one use only. Instead you create them tileable again. This way, you have self-made and individual maps, but you can use them very flexibly on various materials. And, of course, you can mix these self-made textures in your material channel editor as well.

For the tower in our scene, the texture maps you create need to be repeatable to avoid a visible seam (**Fig.18**).

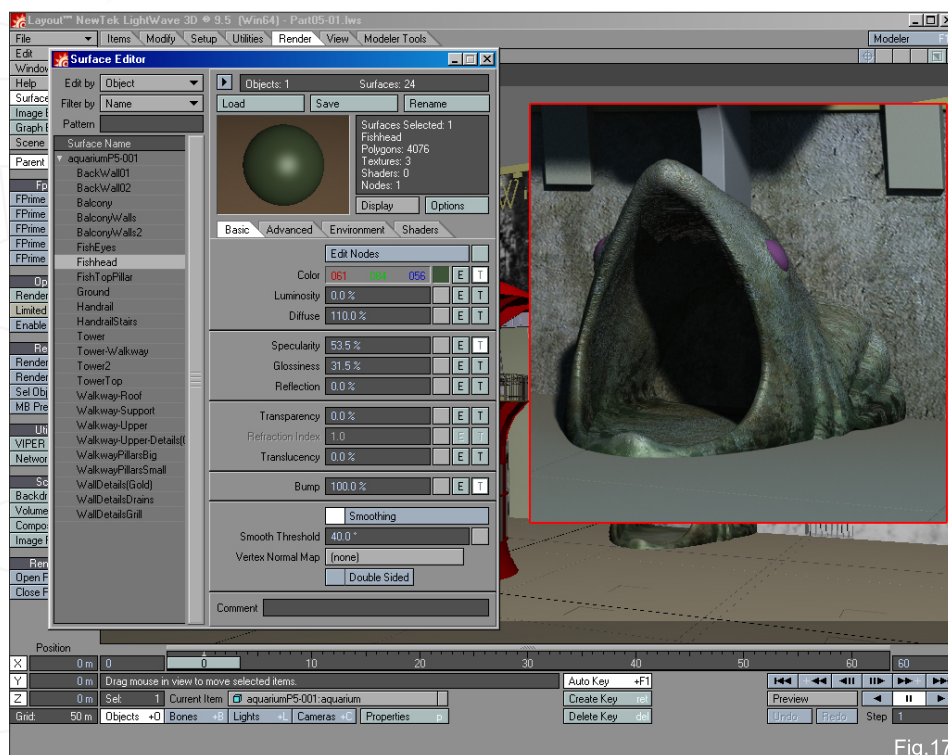


Fig.17



So for every layer you use in your tower texture, make sure that the left side connects exactly with the right side of the layer.

For repeatable textures this is quite easy: just place the left edge of the layer on the left edge of the texture, then make a duplicate of this layer and move it towards the right edge. Now all you have to do is blend the two parts in the middle (**Fig.19**).

For the tower, the map is now repeatable on the horizontal axis. This way we don't have any seams in it. The bump and specular map can be created just as with the other techniques. Just copy all the layers and work on them individually.

With the techniques shown in this part of the tutorial, you should be able to create and use the textures and materials for the rest of the scene.

Whenever you can, try to copy materials and settings that work for you – this not only saves you a lot of time, but it also helps you to keep the look more consistent. For example, the fish head material is almost identical to the

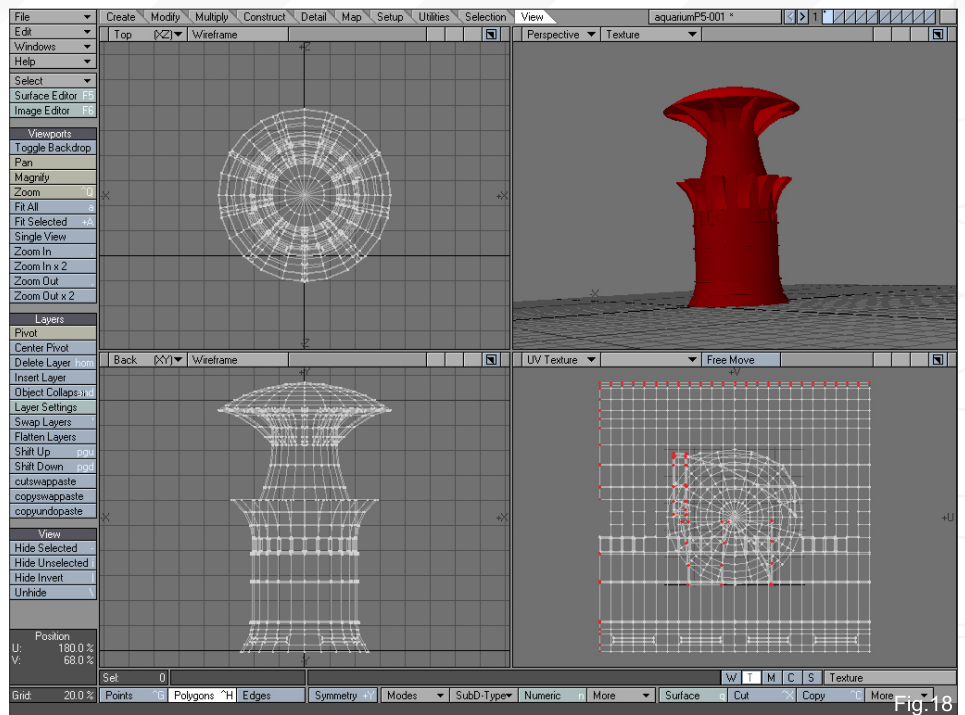


Fig.18

tower material. The differences are only in the specularity and glossiness amounts (**Fig.20**).

In the next instalment of this tutorial, we'll create a scene file with an interesting lighting setup and talk about the various rendering methods.

If you have any questions, please feel free to contact me via my homepage.

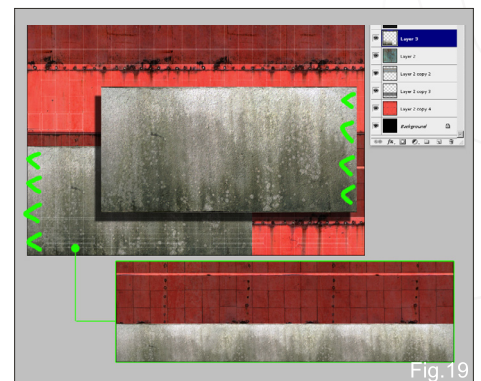


Fig.19

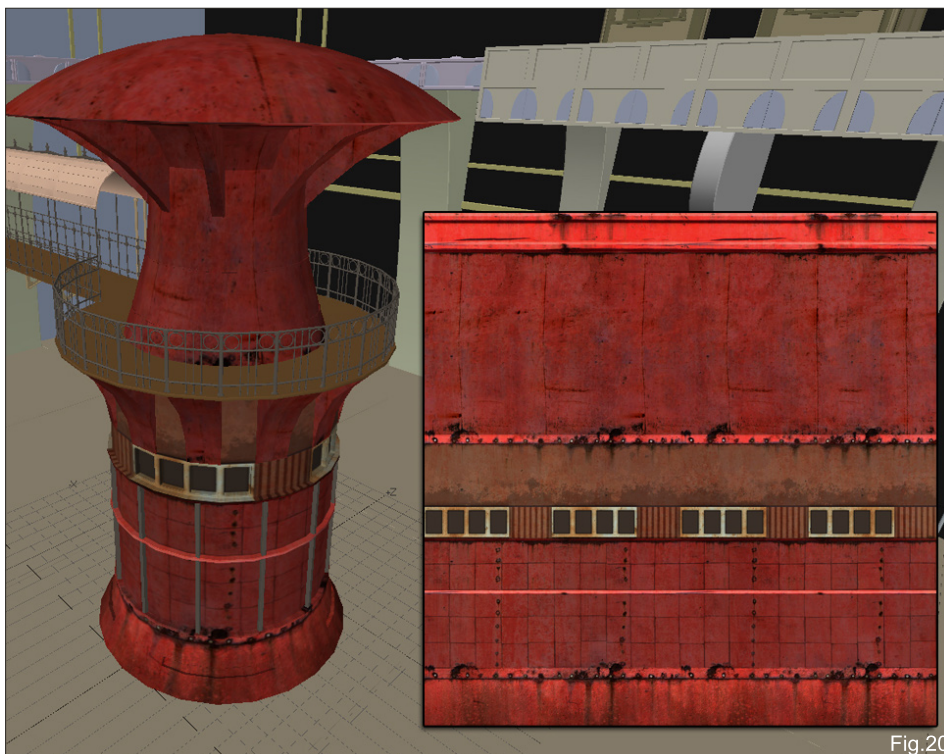


Fig.20

## AGED & WEATHERED ENVIRONMENT

CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER  
PART 5: TEXTURING PRINCIPLES

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# CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER

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The schedule is as follows:

**Issue 037 September 2008**

## **PART 1: IMPORTANCE OF REFERENCE**

The series will begin with a look at the gathering and importance of reference material, and then transposing these into some concept sketches and a concept / production painting.

**Issue 037 September 2008**

## **PART 2: MODELLING OVERVIEW**

This chapter will go on to deal with a general modelling overview, which will be non-software specific, and then follow with a look at Photoshop and some general preparation of textures.

**Issue 038 October 2008**

## **PART 3: PREPARING THE TEXTURES**

This chapter will focus on Photoshop and more specifically, the job of preparing textures, including painting out seams and making images tileable.

**Issue 040 December 2008**

## **PART 4: MAPPING**

This chapter will focus on the mapping and unwrapping of your scene

**Issue 040 December 2008**

## **PART 5: TEXTURING PRINCIPLES**

This chapter will focus on texturing principles and will cover texture resolution, bump specular and normal maps along with combining textures. It will also cover using masks and adding dirt and grime

**Issue 041 January 2009**

## **PART 6: LIGHTING & RENDERING**

The final chapter will discuss lighting and rendering techniques and show how a simple lighting rig can be set up, along with different render passes ready for a final composite in Photoshop.

MAYA



# AGED & WEATHERED ENVIRONMENT

CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER  
PART 5: TEXTURING PRINCIPLES

## INTRODUCTION

In this part of the tutorial I will introduce the basic idea of creating texture maps for objects using Maya and a 2D programme, such as Photoshop. When we are texturing, there are some key points that we need to ask ourselves. What is the final output resolution of our image? Is the camera going to move? What kind of results are we expecting? I will cover some of these basic ideas in this part of the series.

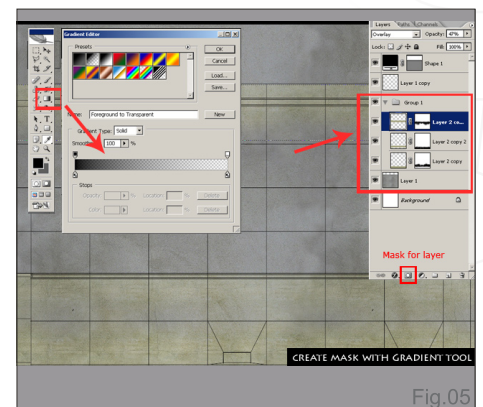
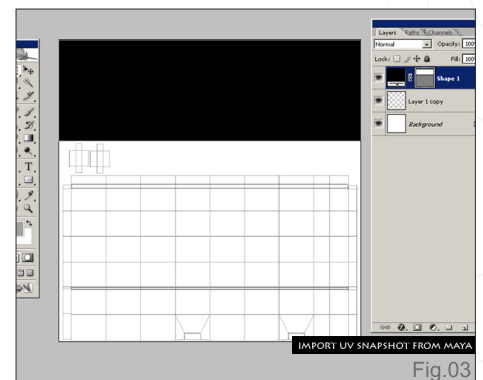
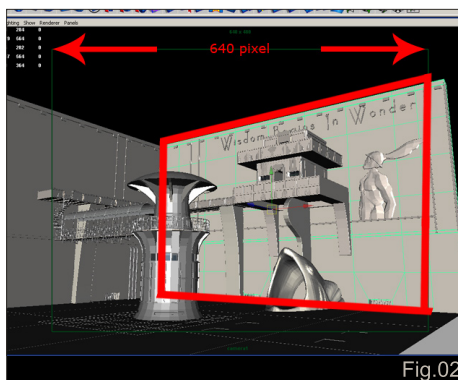
## REVIEWING THE 2D CONCEPT

As part of this tutorial series we have been given a 2D concept to assist with the texturing of the 3D scene (**Fig.01**). If we review the 2D concept, we can understand the selected camera angle, and from here we can get a rough idea of the scale of the objects inside the scene, and an idea of the overall texturing of said objects.

First of all, we'll set our final image render to be a 640x480 pixel still image. The camera won't go too close to any object inside the scene, and so with this in mind we can decide upon the resolution of our texture maps. The cliff in the background and the sky will both be done in Photoshop, and finally we'll need to take care of the lighting situation. We can get a basic idea of the lighting from the concept image; we'll need a spotlight in the scene for the area around the balcony and the relief on the wall – from there we will have an idea of the texturing priorities.

## TEXTURE MAP RESOLUTION

When it comes to creating texture maps in Photoshop, the common question is the resolution of the texture maps. As I've already mentioned, if our final output is 640x480 and the camera won't be going too close to any of



the objects inside the scene, we can decide on the resolution based on our camera angle. First of all, we can see that the wall takes up almost 90% of the height of our camera frame, meaning it will be around 430 pixels (**Fig.02**). Maya will be working with our texture map in square multiples of 64 (a square image), so our texture

map will be 512x512 pixels, but it will be good to create a bigger texture map than this in case we need it for some reason. From the Texture Editor we can see a square bounding box; all our UVs are placed inside this square – you can certainly use non-square textures, but if you do some test renders you can see that square



and non-square textures use the same amount of memory (so this is a note on the usage of memory when you're working on a texture map).

## CREATING DIFFERENT TEXTURE MAPS

Creating Texture Maps for the wall in Photoshop  
In this section, we will create our texture maps – Diffuse, Bump and Specular – based on the UV snapshot in Photoshop.

### a. Diffuse Map

First of all, we import the UV snapshot of the wall from Maya into Photoshop (**Fig.03**).

1 - From the beginning we will create a base layer of the texture (TTexV3\_R2-Grey20). Scale the texture map to get the correct scale of the

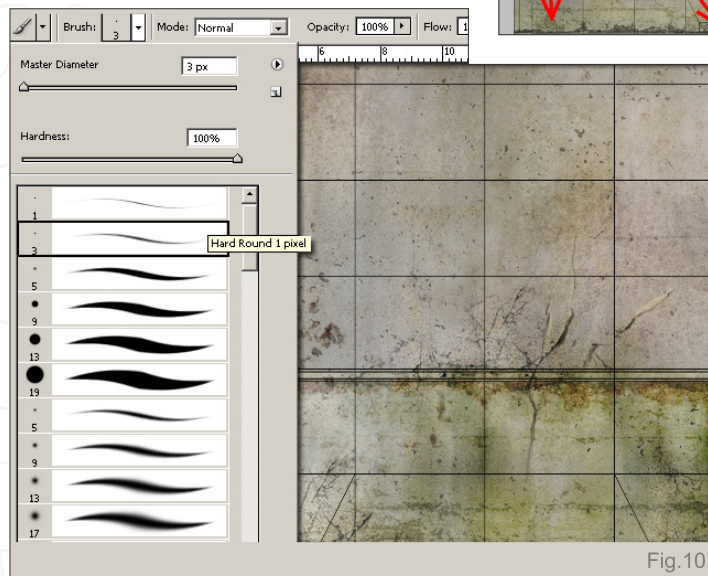


Fig.10

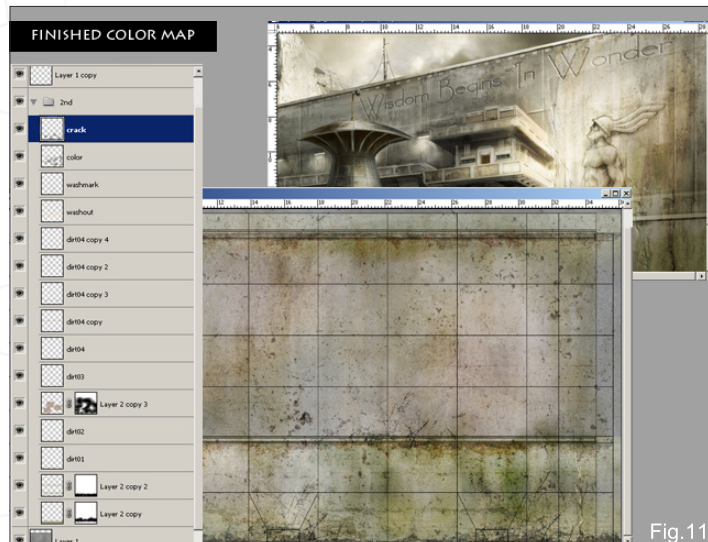


Fig.11

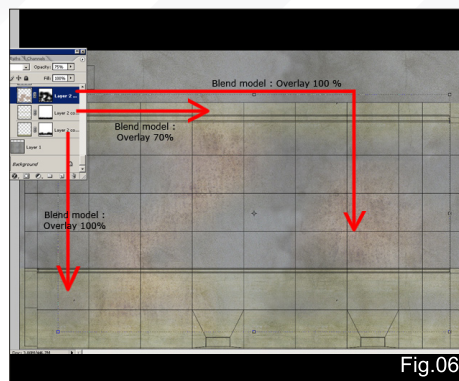


Fig.06

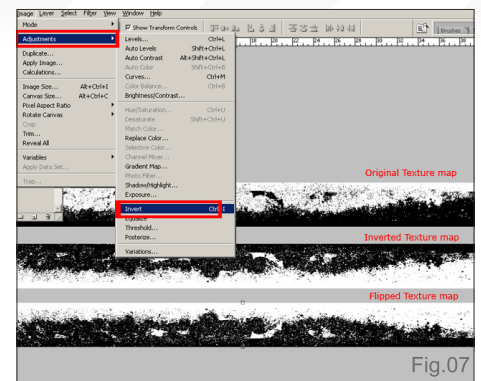


Fig.07

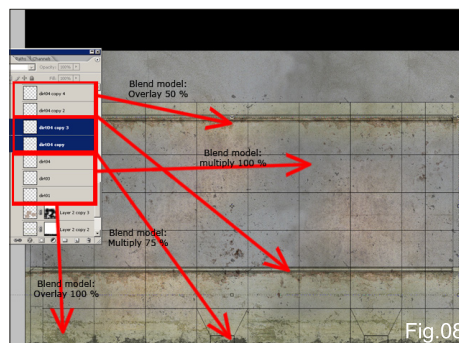


Fig.08

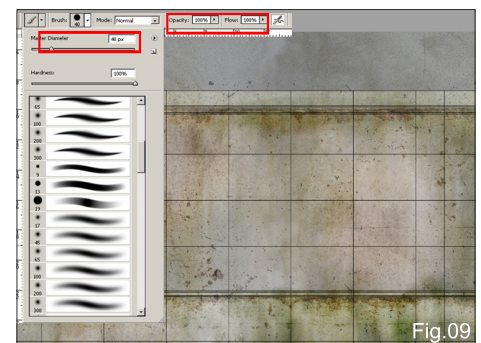


Fig.09

texture, following the 2D concept painting (**Fig.04**). Duplicate the base layer (Layer > Duplicate Layer) and reposition the duplicated layers until they sufficiently cover the whole canvas. Merge all the duplicated layers (Layer > Merge Down (or Ctrl + E)).

Add in the second and third texture map, too (TTexV3\_R2-Yellow10, TTexV3\_R2-Normal02), blending them with the Overlay and Hard Light options. Create a mask, by clicking on the "add layer mask" button at the bottom of the Layers menu, to mask out the edge, using the Gradient Tool to give variation to the wall texture (**Fig.05** & **Fig.06**).

2 - Once the basic layer has been created we can start adding some dirt texture maps (TTexV3\_R2-dirt03, TTexV3\_R2-Green-07b, TTexV5\_R2-tile02heavy14) using Image Adjustments > Invert to invert one of the texture maps that we think will be suitable for the dirt on top of the wall. Using Edit > Transform > Flip Vertical we flip the duplicated texture map for the bottom (**Fig.07**), and then blend them with the Multiply and Overlay options, masking out some parts of maps – again with the Gradient tool (**Fig.08**).

3 - Create an empty layer with the Overlay blending mode and start to paint some washed-out effects on the wall with an Airbrush Pen, using a green or light-yellow tone. Examine the results and then adjust the opacity to achieve better blending into the background (**Fig.09**).

4 - Add some crack texture maps with the Multiply blending mode (TTexV2\_R2-dirt05, TTexV2\_R2-Stone03). Erase some parts of the original map to achieve natural looking cracks, and then, using a Hard



Round brush and the Eyedropper tool, pick colours from the original map and start touching up some parts of the cracks, as needed (Fig.10).

5. During this process we should be constantly reviewing the 2D concept painting and we will be adjusting the Saturation, Levels and Colour Balance of each layer, to achieve the best representation of the original concept (Fig.11).

#### b. Bump Map

Here we will create the bump map based on the colour map just created. First, duplicate the colour map group and Adjustments > Desaturate all those layers. Re-adjust some of the layer's opacity and delete the washed out layer that we created before (this is not necessary in a bump map). Create a new layer and paint some gap lines on the wall (Fig.12).

#### c. Specular Map

We will now create a specular map based on the bump map just created. First, we will duplicate our finished bump map by going to Select All and Edit > Copy merged, using Image > Adjustments > Levels to increase the contrast. We can paint some extra highlights by adding a new layer (Fig.13).

Because of the similarities between materials, we can use a similar method and texture maps to create the texture maps for the floor, the relief figure on the wall, and the fish head on the floor.

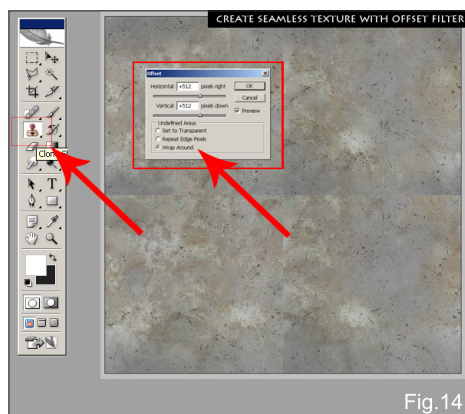


Fig.14

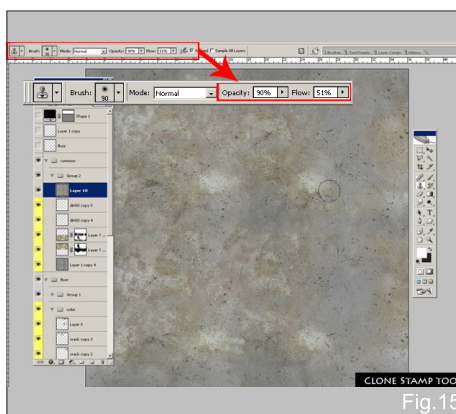


Fig.15

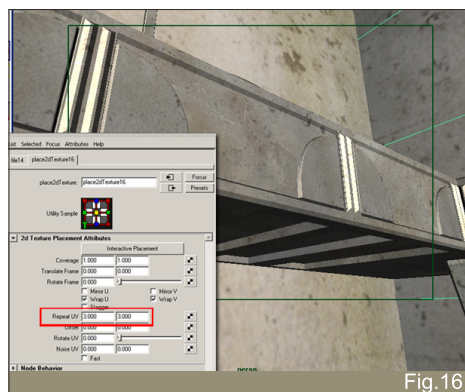


Fig.16

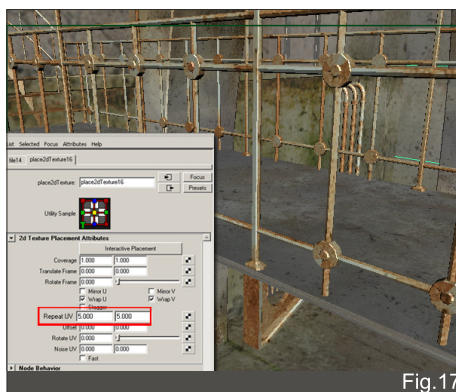


Fig.17

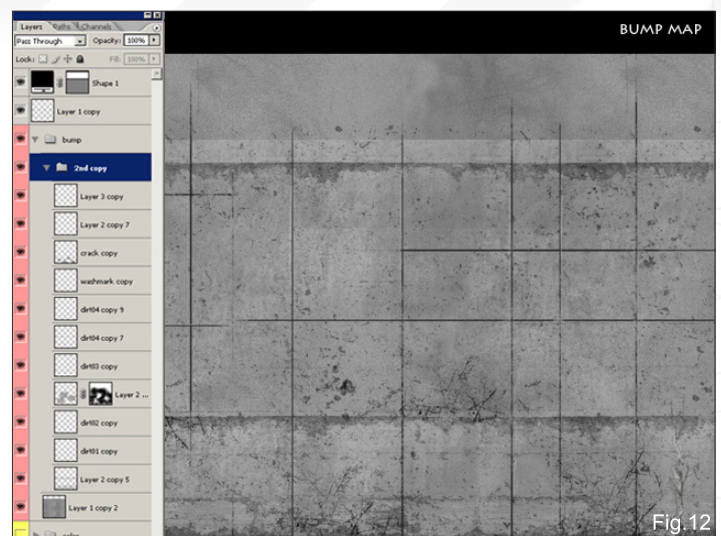


Fig.12



Fig.13

## CREATING SEAMLESS COMMON TEXTURE IN PHOTOSHOP

Sometimes we will use some seamless textures to cover up parts of objects which are less important or too small to see in our scene; for example the metal fence, water pipes on the wall or the relief on the balcony. If they are too far away from the camera view then it's not necessary to give them a very detailed map. If our texture map is not seamless, we will have to apply it to a shader and repeat it – they will look like tiles. In this section, I will introduce how to create a seamless texture map for our scene, using Photoshop.

#### Creating a Seamless Common Stone Texture

1. Based on the same texture used before, we will create a seamless stone texture for common



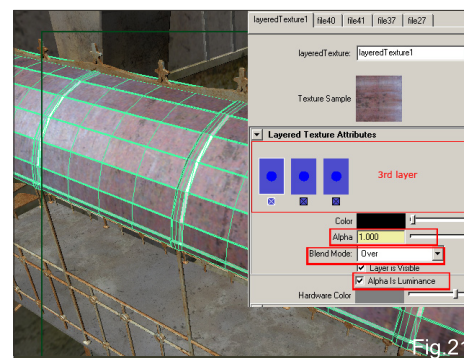
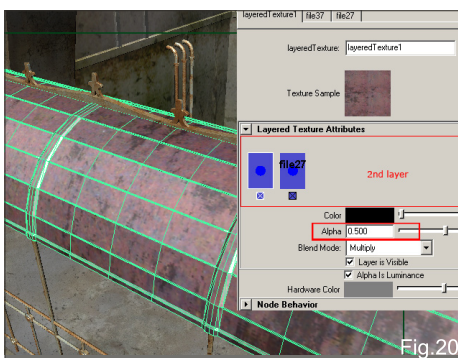
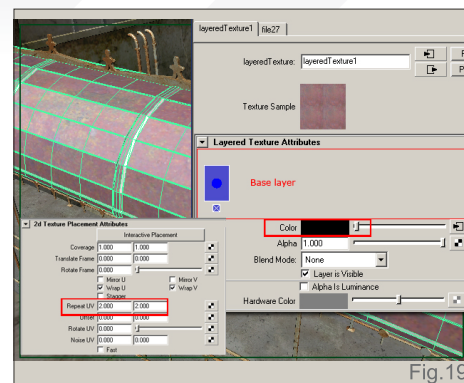
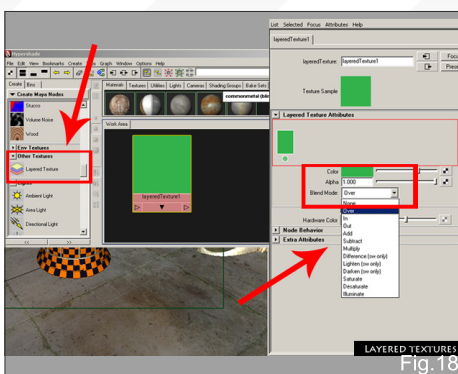
use. Following on from the basic texture already created, we apply a Filter > Other > Offset with the Wrap Around option, and enter half of the resolution of the image inside the Horizontal/Vertical section. After we've applied the offset filter (Fig.14) we will see a cross in the middle of the image – we will use the Clone Stamp tool to solve the problem by “cloning” the texture.

2. Select the Airbrush Pen as your Clone brush, and set the Opacity to 90% and the Flow to 50%. Pressing the Alt key on your keyboard you will see the cursor change to a target symbol; from here you can select the source you would like to clone by clicking on it. After releasing the Alt key, you can start to “clone” the texture by painting over the hard edges (Fig.15). After all the hard edges have been covered up with the Clone tool, we can duplicate the layer, desaturate it, and adjust the Levels to create a bump map and a specular map (Fig.16).

With the same method, we will create another common, dusty metal texture for the metal fence on the sky-bridge, and for the drain gate on the bottom of the wall (TTexV2\_R2-Metal17). Here are two examples of when we apply our seamless texture maps to our objects in Maya, and repeat the seamless map by multiplying the UV inside the 2D Texture Placement Attributes section (Fig.16 & Fig.17).

## CREATING LAYERED TEXTURES IN MAYA

In Maya > Hypershade you can find a utility under the Other Textures section, called “Layered Textures” (Fig.18). This is a utility



which allows you to create some layered textures, similar to the one we did in Photoshop. With layered textures we can combine different texture maps together in different ways, using the blending modes and alpha masks. I will introduce this way of creating layered textures for the roof of the sky-bridge.

1. First we will connect the Layered Texture to the Colour section of a blinn material (use your mouse to click and drag to the colour section). As you can see, by default the Layered Texture Attributes has only one green box inside it; if you click on the empty space beside it, another green box will appear. Let's create three layers for the colour section, and overlap those layers from left to right.

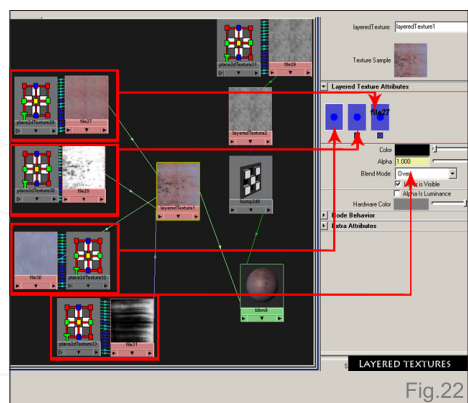
2. Let's create a base layer texture (TTexV3\_R2- Red04) and repeat each UV twice (2D Texture Placement Attributes) (Fig.19). Click on the middle green box and load another dirt texture (TTexV3\_R2-Red10b) for the colour section, and, using the Multiply blending option and the Alpha set to 50% (Fig.20), these two layers blend together, similar to the method utilising Photoshop. You can use different resolutions of texture maps. At the end we

will apply another texture on the third layer (TTexV3\_R2-Blue09), but this time we will apply an extra alpha map to it (TTexV5\_R2-tile02medium\_08 – adjust the Levels with Photoshop), blending with the Over option. Because we're using a jpeg as the alpha map, the Alpha Is Luminance option needs to be checked (Fig.21).

3. This is the basic network with layered textures for the colour section. With the same method we will apply a bump map and specular map to the shader. As you can see from the Layered Textures utility, we have the opportunity to control the use of each layer and texture map, without using a large single texture map (Fig.22). With different kinds of combinations you will be able to create a lot of different texture maps.

## LOADING TEXTURE MAPS IN MAYA

After all the texture maps have been created in Photoshop, it's time to connect them inside Maya. In this section, I will give you an example of the network connection using those texture maps just created.





There are different basic materials inside Maya – for example Blinn, Lambert, Anisotropic, Phong, etc. All of these shaders have different options for some basic uses of different types of objects; for example, the Lambert shader is for objects without specular highlights, and Anisotropic for objects with grooved surfaces. (You can find a detailed description in the Maya help files.)

In this scene, we use a Blinn for most of our objects. Inside a blinn material we load our colour map (diffuse map) in the colour section by clicking the small box beside it. A menu will pop up, and in it we will select 2D Textures > File, as the texture placement method (Fig.23). With the same method, we will load our bump map under the Bump section and specular map under the Specular Roll Off section. Inside the Bump section, you will find 2D Bump Attributes > Bump Depth which you can use to control the amount of the Bump effect; by default it will be set to 1. Besides this, you will see some options inside the Blinn material – for example Reflection, Specular, Colour and so on (in the next part of this tutorial series I will cover this in the rendering) (Fig.24).

## FINAL CONCLUSION

Texturing is like a balancing game, it depends on where you stand. You will need to increase or decrease some details on some texture maps to achieve a better overall look in the final image, with a combination of lighting and shadows. Imagine how you would like to see the final image and this will help you to create your texture maps – it's similar to painting, only with different tools.

At this point we have set up all the textures for our scene (Fig.25), and in the next part of tutorial we will be good and ready to do the first render of

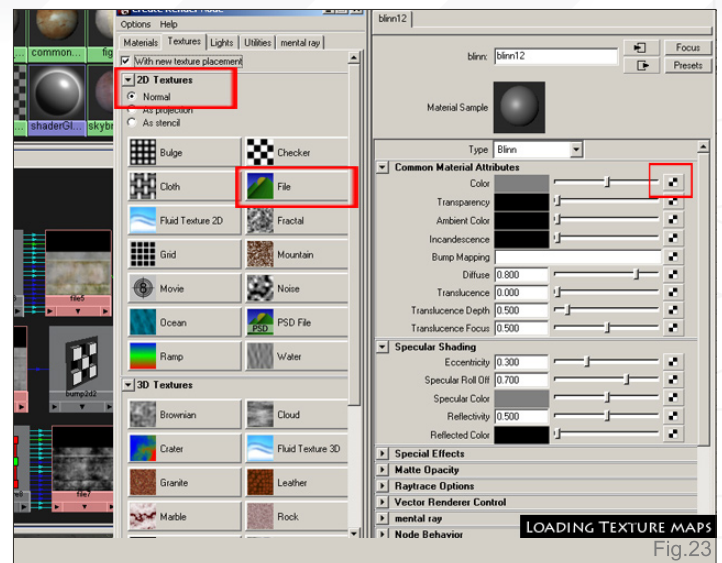


Fig.23

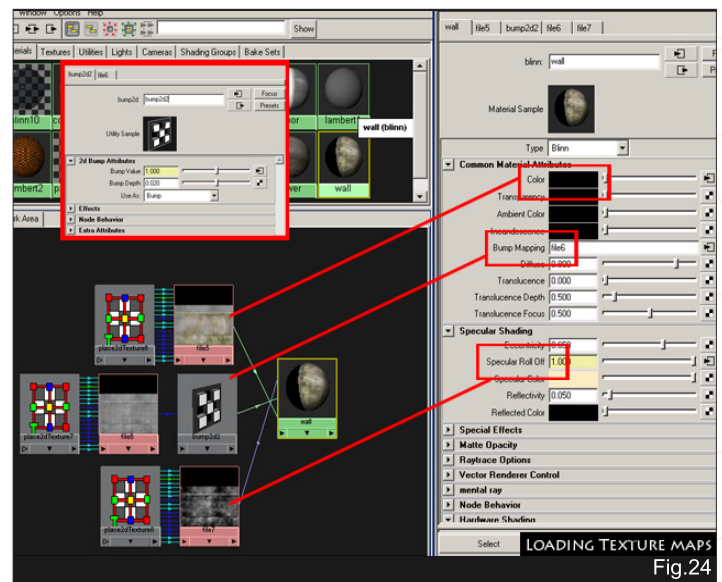


Fig.24



Fig.25

our scene. In the next part of this tutorial series, we will also discuss how the lighting/shadows affect our scene.

## AGED & WEATHERED ENVIRONMENT

### CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER

#### PART 5: TEXTURING PRINCIPLES

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**Issue 037 September 2008**

## PART 1: IMPORTANCE OF REFERENCE

The series will begin with a look at the gathering and importance of reference material, and then transposing these into some concept sketches and a concept / production painting.

**Issue 037 September 2008**

## PART 2: MODELLING OVERVIEW

This chapter will go on to deal with a general modelling overview, which will be non-software specific, and then follow with a look at Photoshop and some general preparation of textures.

**Issue 038 October 2008**

## PART 3: PREPARING THE TEXTURES

This chapter will focus on Photoshop and more specifically, the job of preparing textures, including painting out seams and making images tileable.

**Issue 040 December 2008**

## PART 4: MAPPING

This chapter will focus on the mapping and unwrapping of your scene

**Issue 040 December 2008**

## PART 5: TEXTURING PRINCIPLES

This chapter will focus on texturing principles and will cover texture resolution, bump specular and normal maps along with combining textures. It will also cover using masks and adding dirt and grime

**Issue 041 January 2009**

## PART 6: LIGHTING & RENDERING

The final chapter will discuss lighting and rendering techniques and show how a simple lighting rig can be set up, along with different render passes ready for a final composite in Photoshop.

SOFTWARE XSI





# AGED & WEATHERED ENVIRONMENT

## CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER

### PART 5: TEXTURING PRINCIPLES

Welcome to the fifth part of this tutorial. This month we're going to be dealing with textures and shader creation for the objects in our scene. As usual, we'll use XSI (any version will be fine, since what we'll see are basic concept that apply to older version as well as to newer ones). We'll also be using a bunch of textures from the 3D Total Texture collections as a base for the final textures and shaders.

We'll start from where we left off in the previous part (UV creation). Last time we created the UV sets for the objects in our scenes. Now we'll just use those as references to paint our textures in Photoshop. You may also notice that sometimes we'll go back to the UV creation process and adjust (and in some case re-create from scratch) the texture coordinates if needed.

Select the Floor object and hide everything else (Shift + Ctrl + H) (**Fig.01**).

Select the polygons shown in **Fig.02** and Extract (Delete) them.

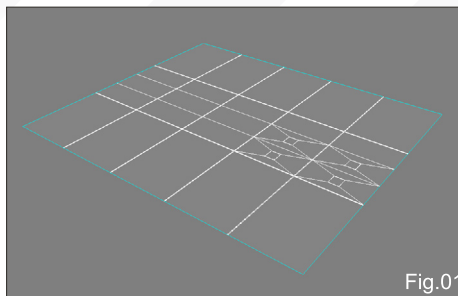


Fig.01

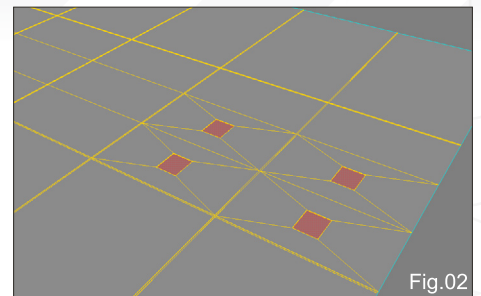


Fig.02

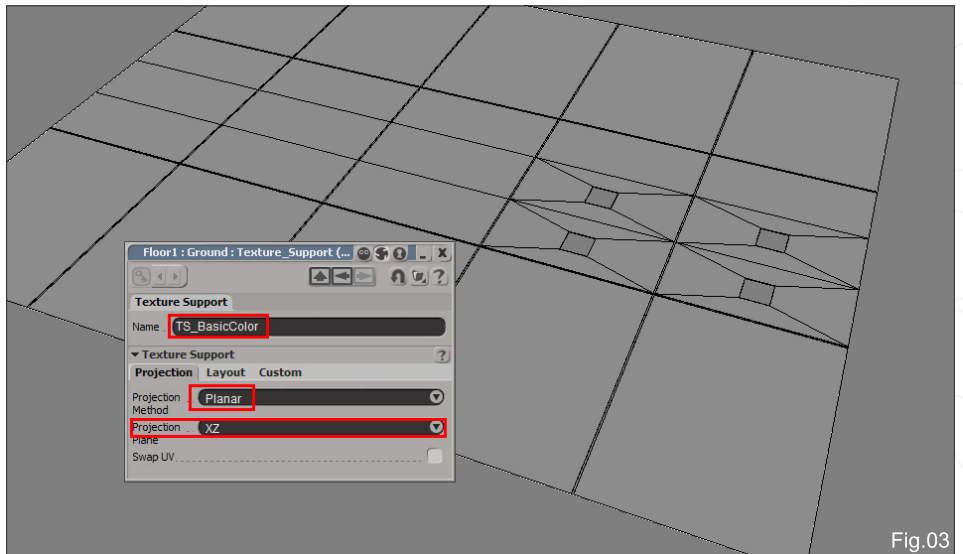


Fig.03

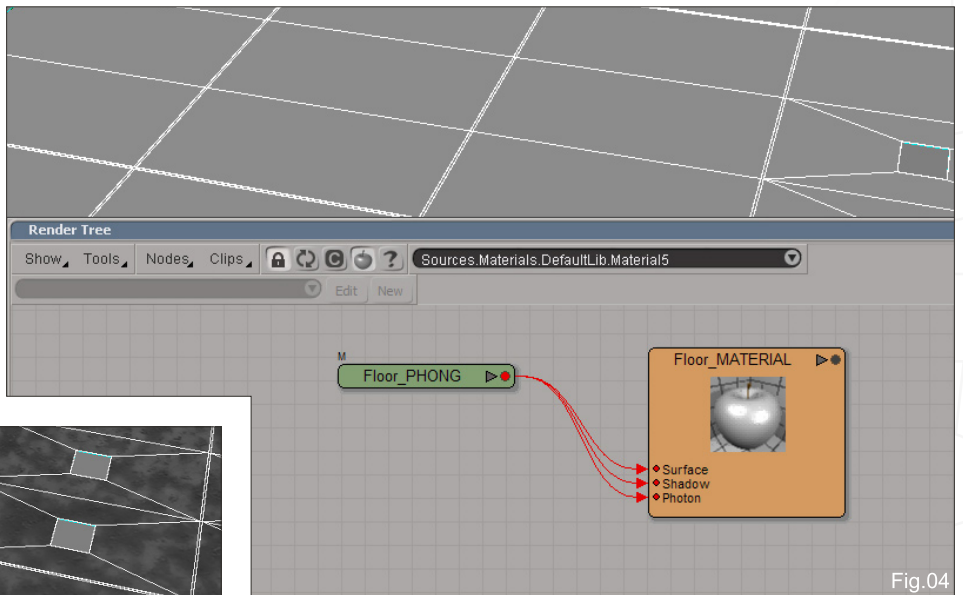


Fig.04

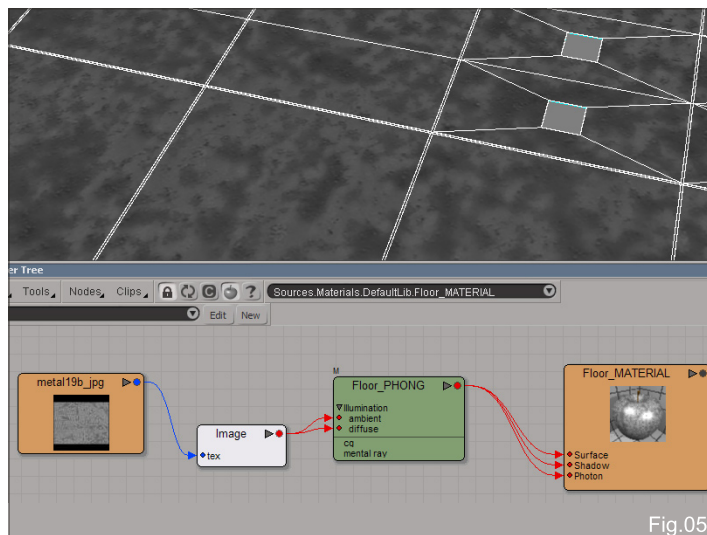


Fig.05

If you've already created UVs for the floor object in the previous part of the tutorial, you can just use them. Otherwise, create a new Planar (XZ) Projection. (**Fig.03**)

Create a new Phong shader and assign it to the Floor (**Fig.04**).

Let's start creating a first basic layer for the texture. We'll use the metal19b\_jpg texture file and connect it to the Ambient and Diffuse nodes in the Floor\_PHONG shader (**Fig.05**).



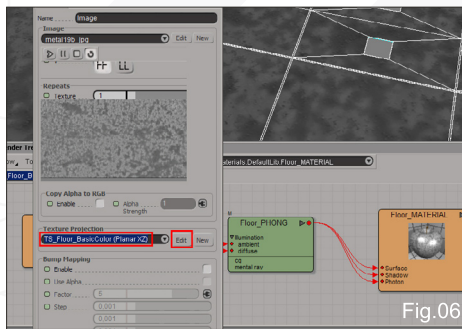


Fig.06

Make sure that the new texture uses the Projection we created earlier (Fig.06).

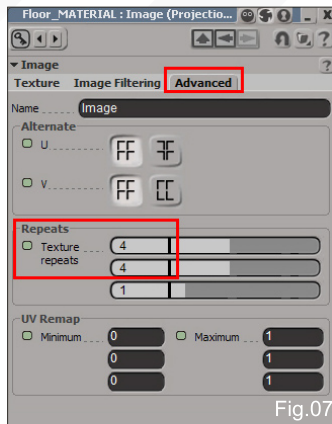


Fig.07

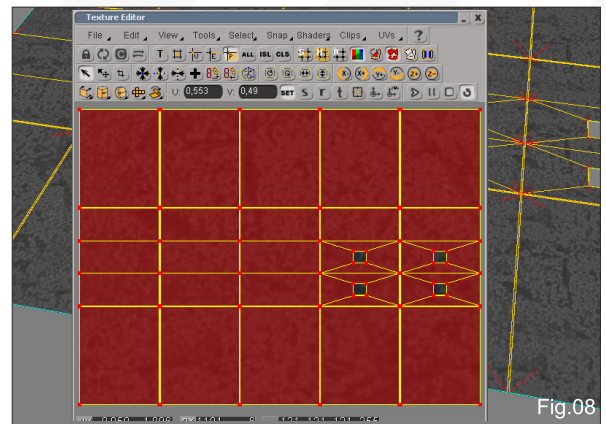


Fig.08

Now, since the texture is small if compared to the size of the floor, we need to tile it a bit to fit the right proportion. Switch to the Advanced tab in the Image node and increase the Texture repeats (Fig.07).

Now we need the UV stamp to paint some textures in Photoshop. Open the Texture Editor and use the Edit – Stamp UV tool to save a picture of the UVs (Fig.08).

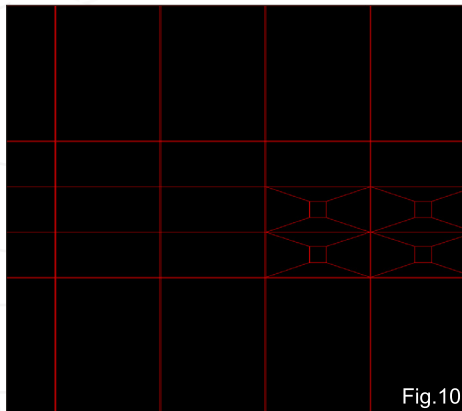


Fig.10

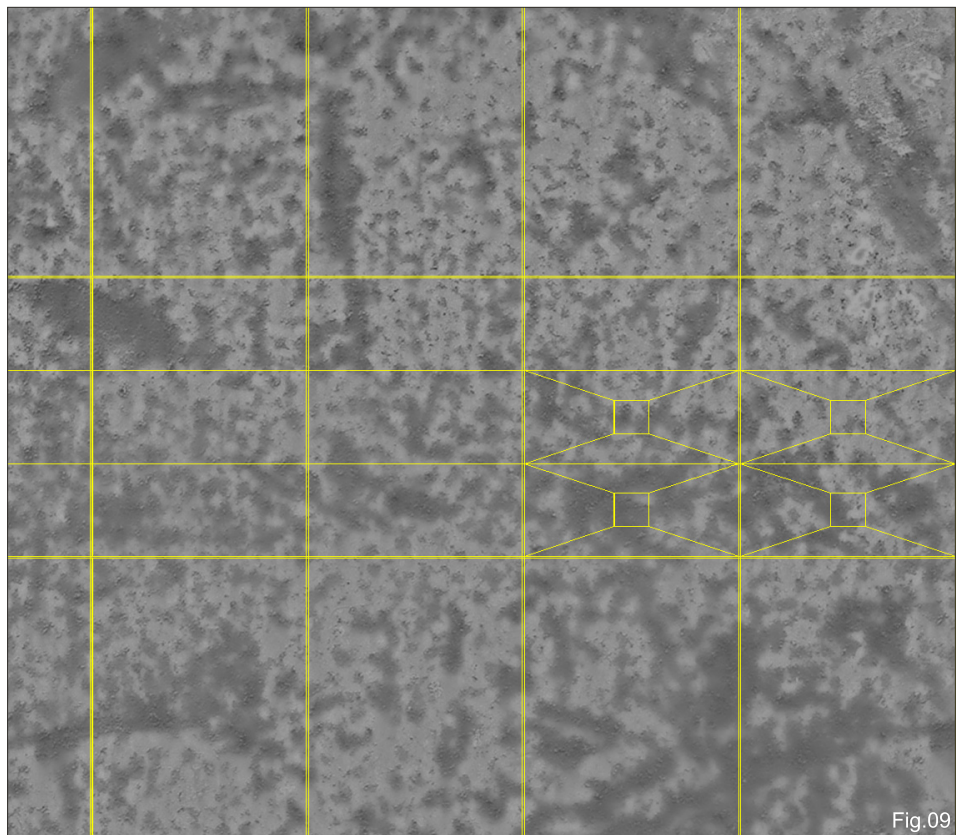


Fig.09

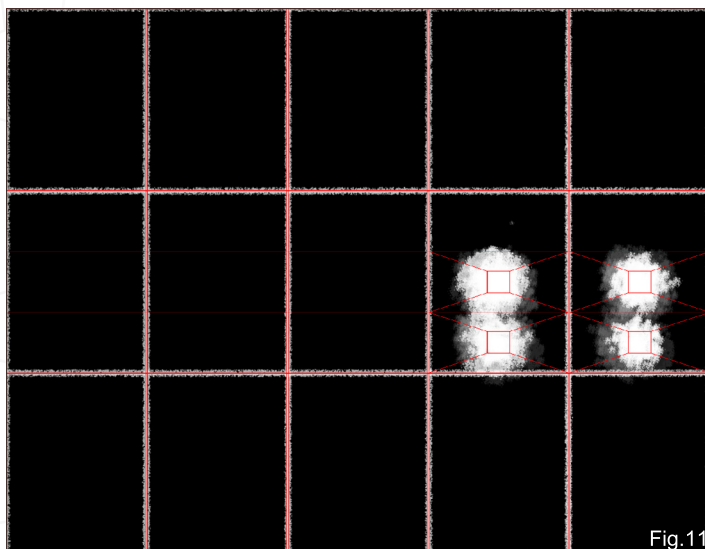


Fig.11

Fire up Photoshop and import the UV layout; we'll use the UVs lines (in yellow) as a guide to paint the texture (Fig.09).

Use the Select – Color Range tool in Photoshop to isolate the yellow lines; then you can just change them to a different colour to better see what's happening while painting (Fig.10).

We want to give the floor an aged and weathered look, so we'll need a basic texture and a "rusty" one. For this we'll need another texture which will blend the first two. The basic idea is to create a black and white texture and use it as an alpha in the 3D software. Where the texture is black, the basic texture will be shown; where there's some white, the rusty texture will appear. Keeping this in mind, we can start painting the white zones over the black background (Fig.11).



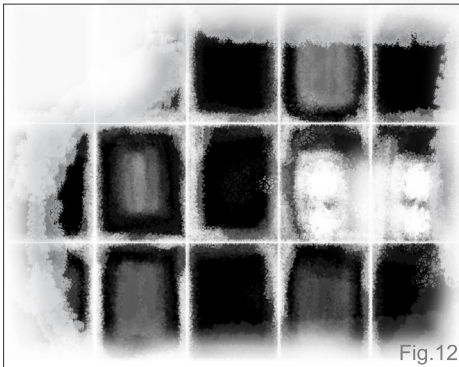


Fig.12

Once the basic lines are set out, we can refine the texture by adding some more white zones (Fig.12).

Now we can go back to XSI Render Tree and set up the shader for the floor object. First of all, let's import all the three textures we need. Stone20\_jpg will be our base texture; overlay02\_jpg will act as the rusty texture and lastly we'll use the ALPHA\_Floor\_tga we just created in Photoshop as the mixing texture. Create a new Mix\_2colors node and connect the Base Texture into the base\_color node of Mix\_2colors (Fig.13); then connect the Rusty Texture to the color1 node and the ALPHA\_Floor texture to the weight1 node.

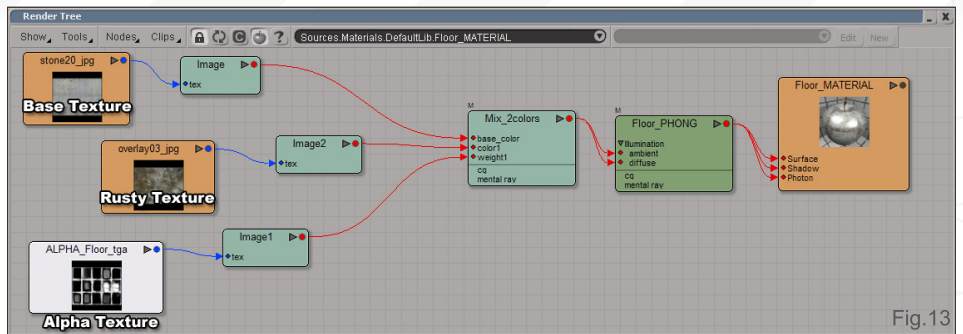


Fig.13

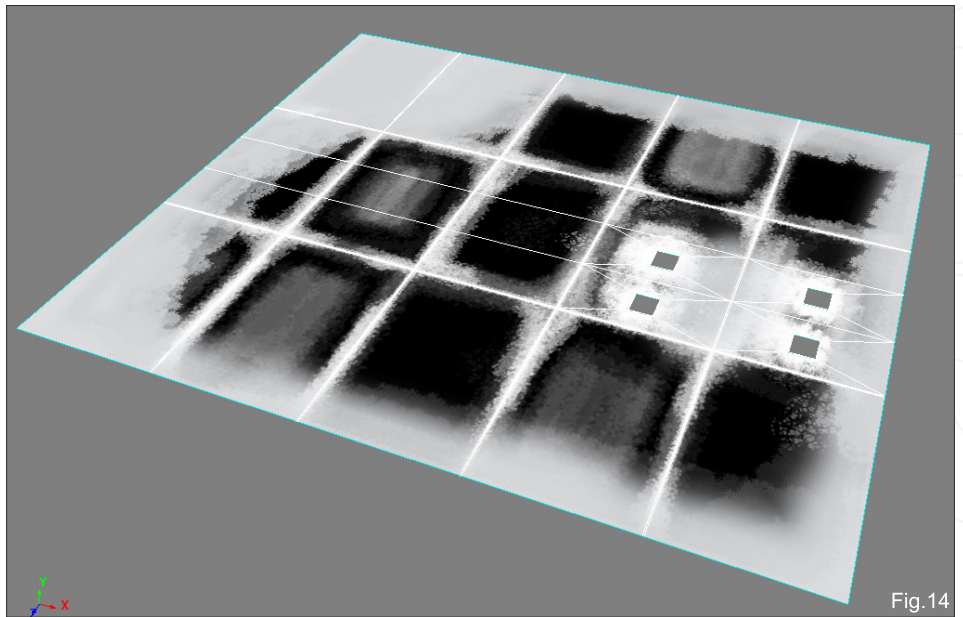


Fig.14

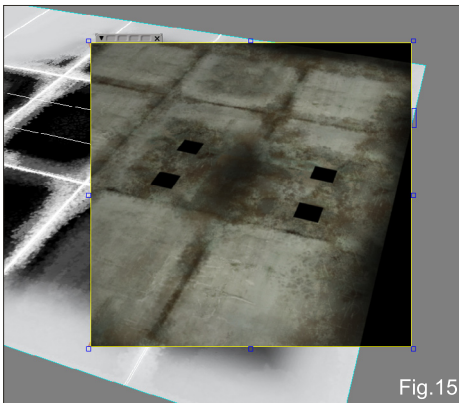


Fig.15

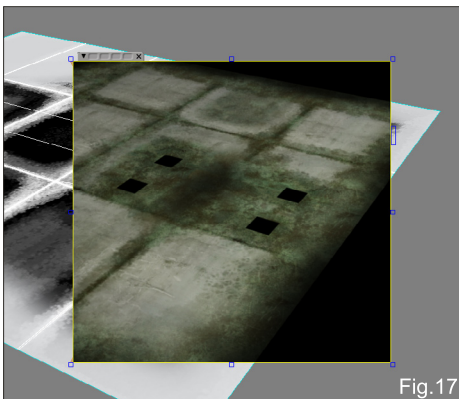


Fig.17

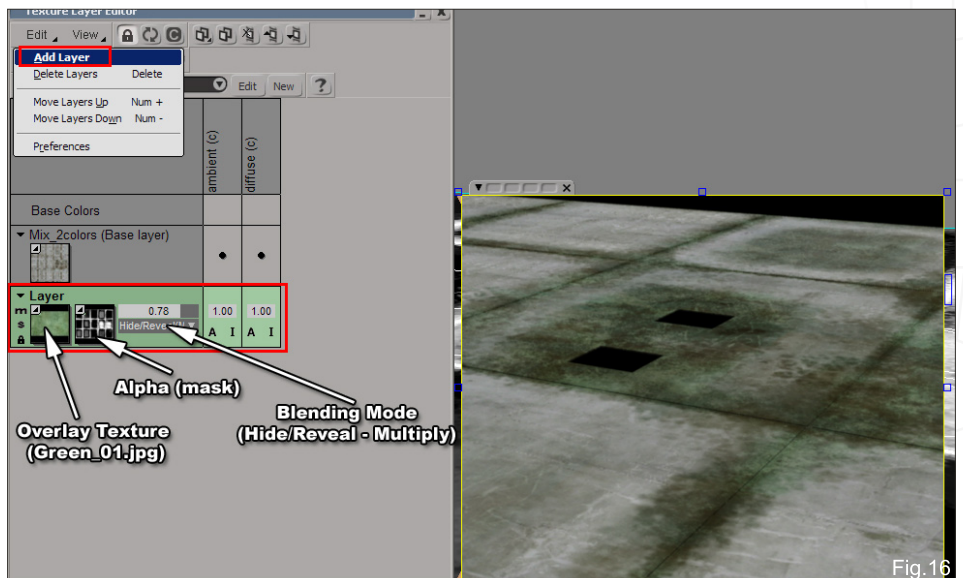


Fig.16

This is how the object will look like in the viewport (Fig.14).

If we now render the scene, we'll get something like Fig.15: the two textures are being blended together by the alpha texture. This is a great technique to make objects look aged and

weathered. Of course it's very important to choose the right textures.

Now we can add one more layer to better detail the floor shader. Open the Texture Layer Editor and add a new layer. Import the Green\_01.jpg texture and assign it to this new layer. Assign





Fig.18

the same ALPHA\_Floor texture to the alpha channel and set the Blending Mode to Hide/Reveal – Multiply. Also, make sure to choose the right amount of blending (in this case we used a value of 0.78) (**Fig.16**)

Now try to do a new quick render to see how it's going (**Fig.17**).

If you look at the concept art for this scene, you'll notice that there are some spots with water on the floor; in order to recreate this effect, we need to make one more texture in Photoshop. Using the UV stamp as a reference, create something similar to **Fig.18**. We'll use this texture to blend between dry areas and wet areas on the ground.

The wet effect will be created with the use of the reflection node in the Phong shader. So connect

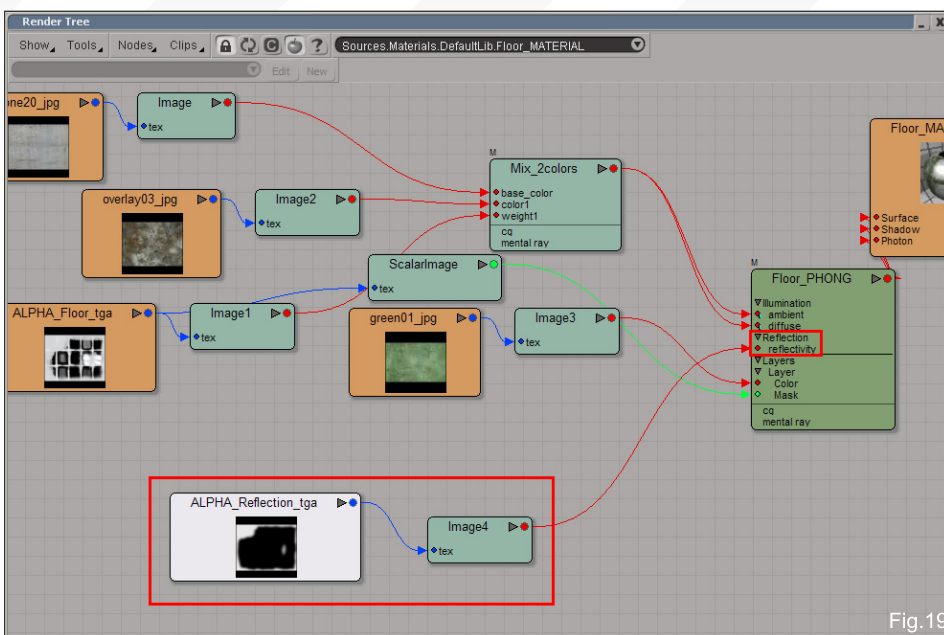


Fig.19

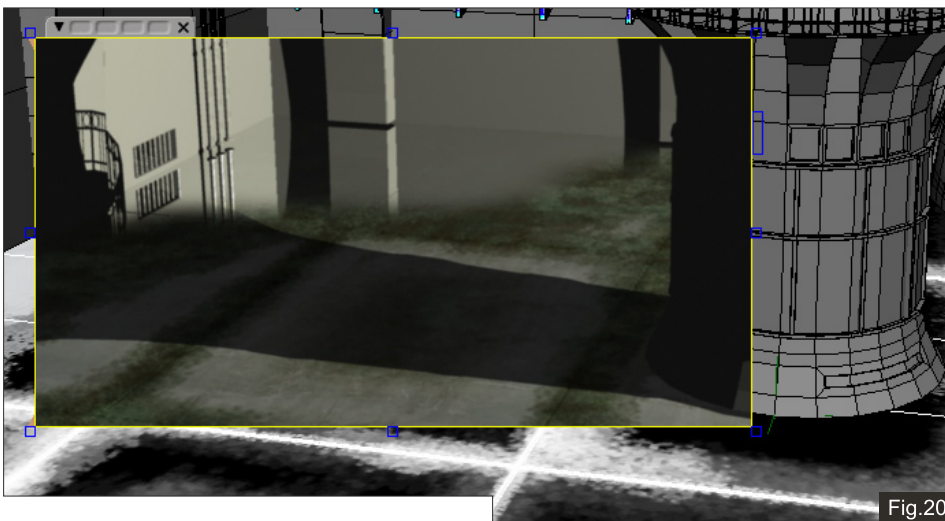


Fig.20

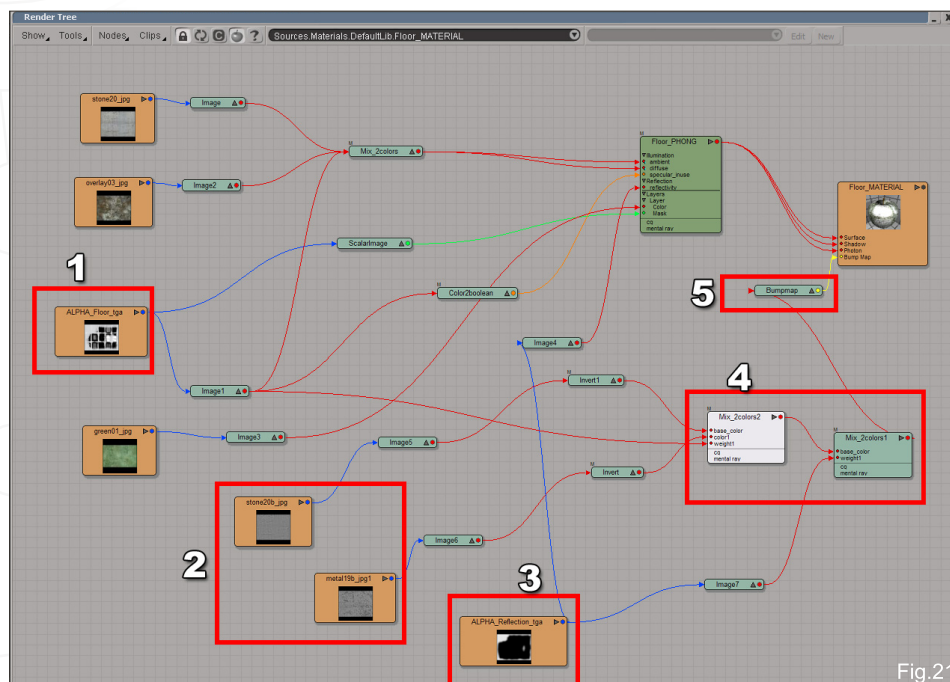


Fig.21

the ALPHA\_Reflection.tga texture as shown in **Fig.19**.

Do another quick render to see how the wet areas behave (**Fig.20**).

Now let's do some other work on the shader in the Render Tree. We can use the same ALPHA\_Floor texture to drive the Specularity, so just connect it to the specular\_inuse node of the Phong shader (**Fig.21**). One more thing our shader is missing is some sort of bump effect, so let's import two new textures (stone20b.jpg and metal19b.jpg) and mix them together with a new mix2\_color node. Then connect it to a Bump map node and connect the latter to the Floor\_MATERIAL. We also need to use the

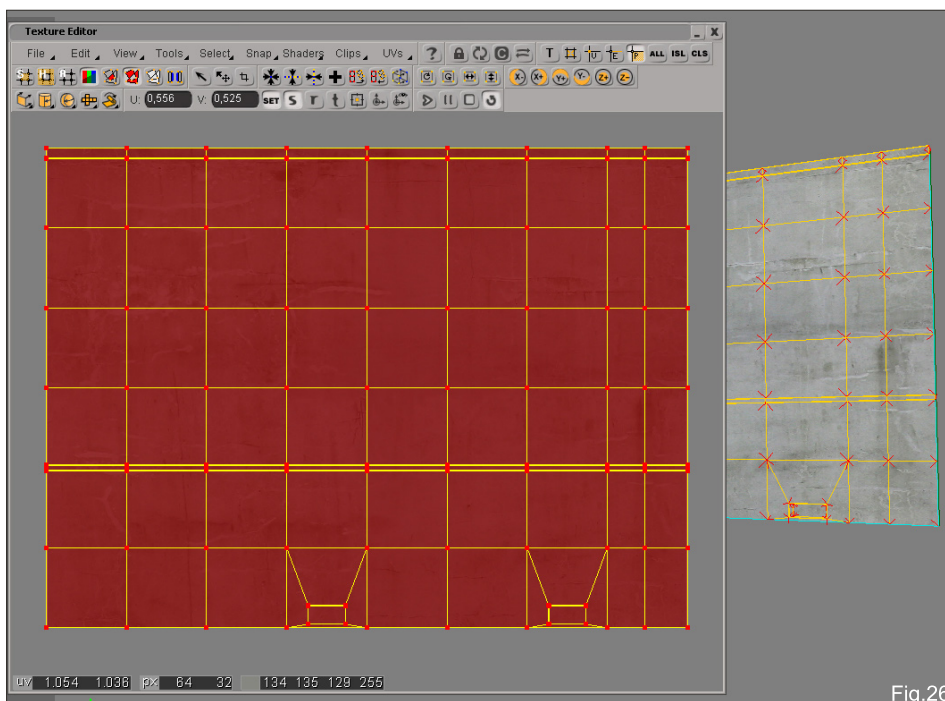
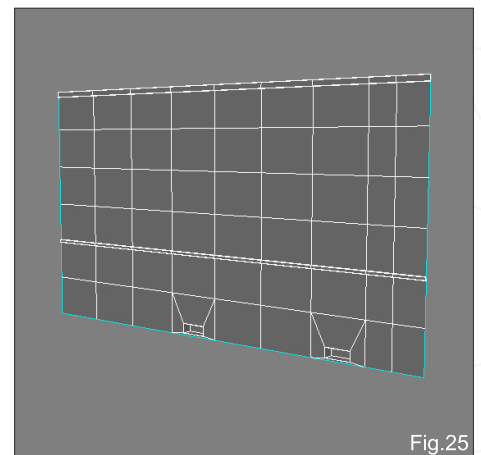
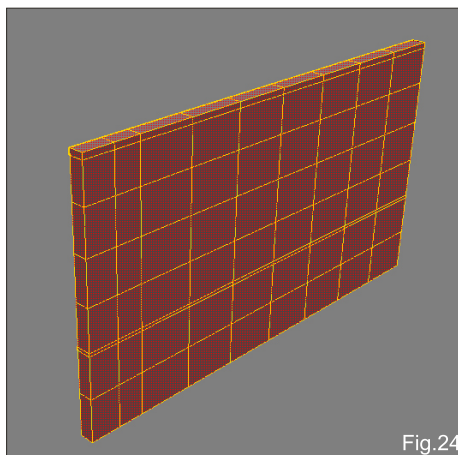
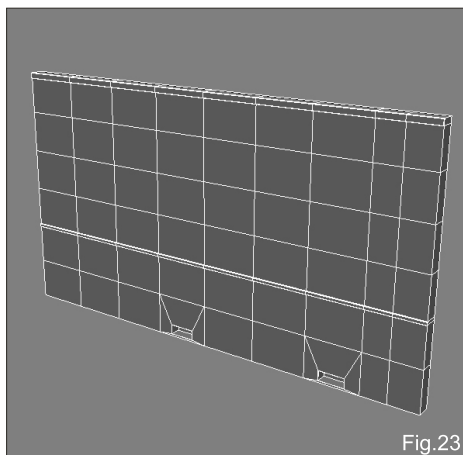
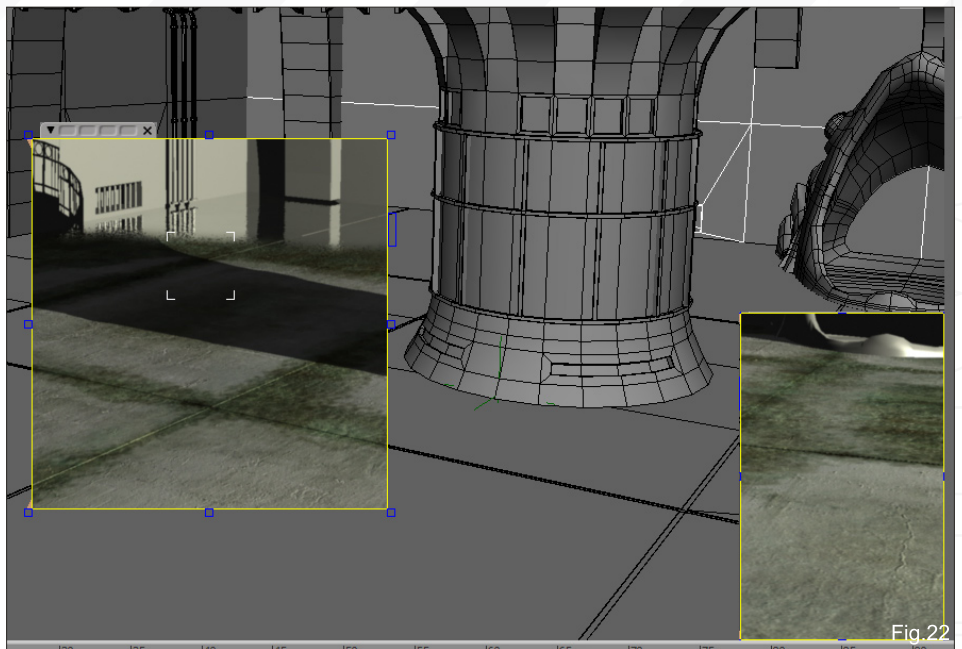


ALPHA\_Reflection texture to drive the bump effect (since we don't want the wet areas to be affected by the bump).

In **Fig.22** you can see the bump effect in action, with no bump on the wet areas.

Now let's take care of the wall object. Select the north wall object and hide everything else (**Fig.23**)

Since this is a quite big object, and we need to optimise the texture space to get a nice detail, we'll just separate the back faces of this mesh and Extract (Keep) them. Select all the faces that won't be visible in the rendering like in **Fig.24**.



We'll just work on the part that faces the inner side of the scene (**Fig.25**).

Assign a new Phong shader to the wall, and then assign the same old stone20b.jpg texture to it. Open the Texture Editor and export the UV layout to Photoshop (**Fig.26**).

Go back to Photoshop and open the UV layout you just saved (**Fig.27**).

This time we'll use a different technique. With the wall object still selected, unhide everything else in the scene, then use the Property – Render Map tool. Set the format X Res and Y Res to something appropriate, for example to 1200 x 900 (which will generate quite a big texture). Then make sure that the Render Map



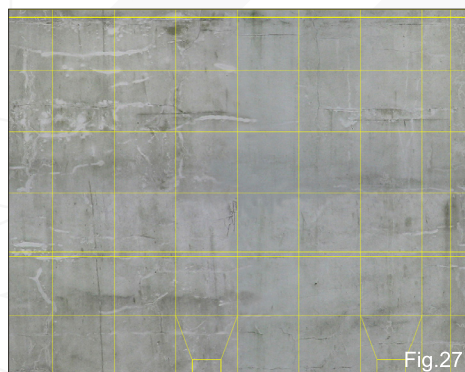


Fig.27

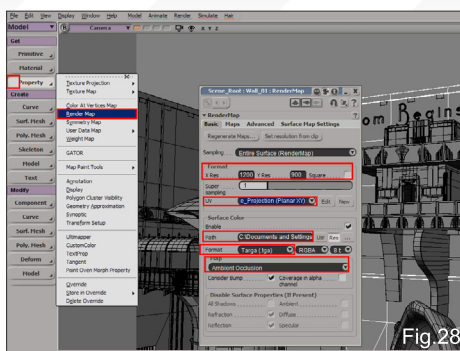


Fig.28



Fig.29

tools uses the Planar Projection you created for the wall (otherwise create a new one with the New button). Set the Path and the name for the output texture and then the format. Finally, set the Map type to Ambient Occlusion and hit the Regenerate Maps button (Fig.28).

XSI will generate a render map which will contain the ambient occlusion for the wall object (Fig.29). This texture will be useful to see what are the more aged and weathered areas of the wall (which happen to be the areas where objects meet each other). Using this as a reference, we can paint our ALPHA\_NorthWall texture to mix some more textures in the Render Tree.

Just like we've done before, use the UV layout to create the alpha mixing texture (Fig.30).

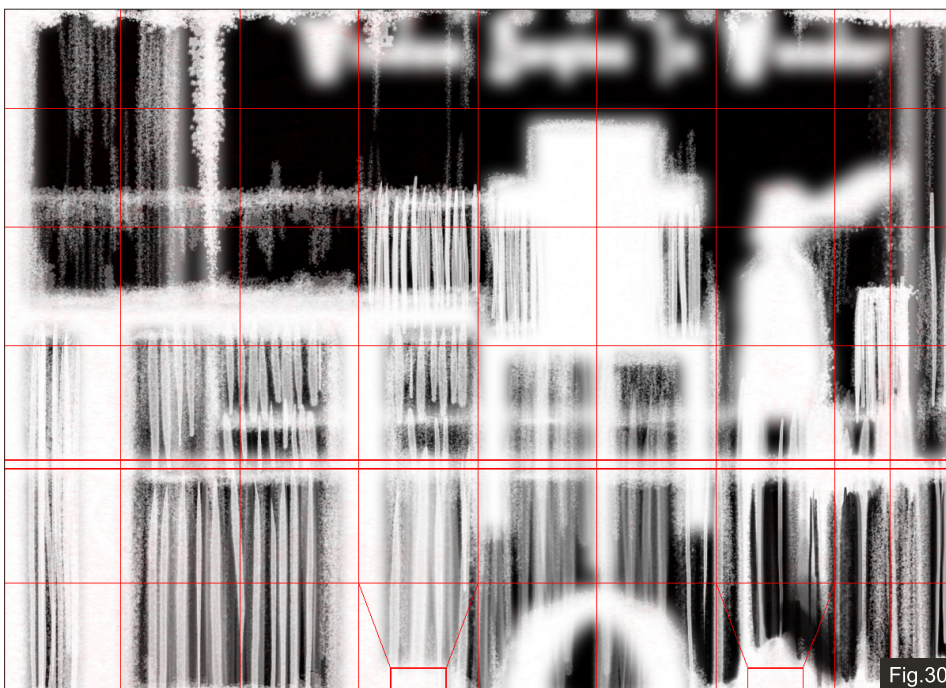


Fig.30

The wall's shader is pretty much the same as the floor one: there's an alpha texture driving the mix, the specular and the bump (Fig.31). There's only one new trick here: the alpha texture is driving the reflection (the node to which it's connected is "usealpharefl" in the Wall\_PHONG shader). In this way, black areas of the alpha texture (e.g. the basic stone texture layer) will reflect the surrounding environment.

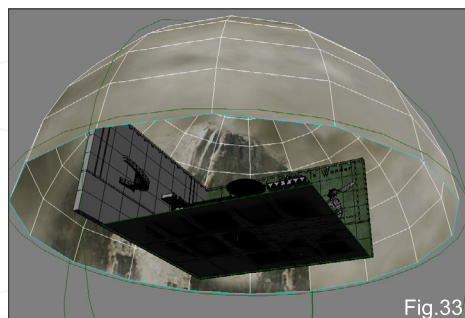


Fig.33

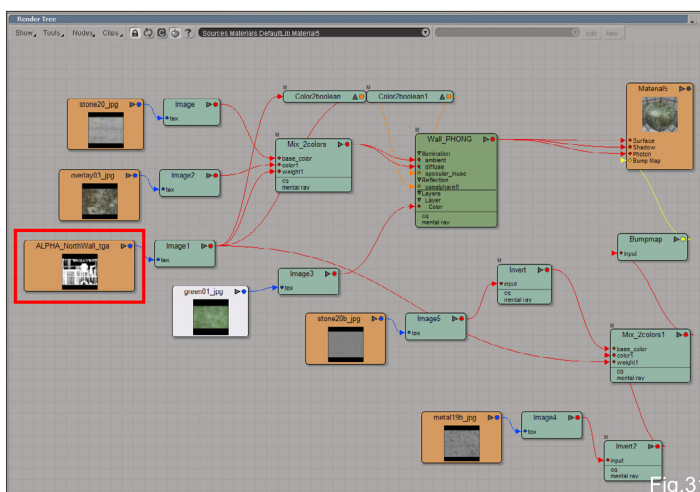


Fig.31

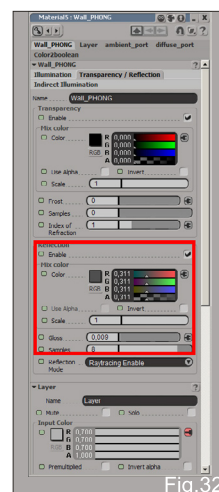


Fig.32

The reflection was set to glossy (with eight samples) because we don't want it to be a mirror reflection, but more like a wet surface reflection (Fig.32).

Since the wall is reflecting the environment, we need to create a surrounding sphere (a

dome) all around the scene, otherwise the wall will reflect pure black (Fig.33). Create a hemisphere and assign a spherical projection to it. Then assign the Aquarium\_Background.bmp texture to a Constant shader and assign it to the hemisphere.



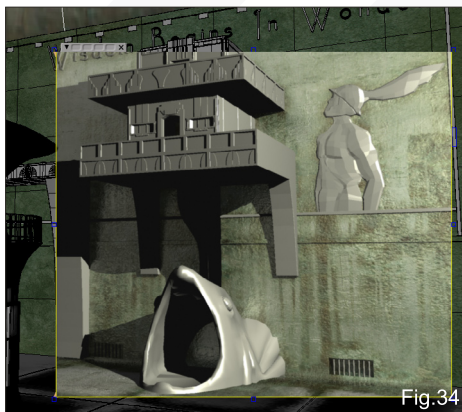


Fig.34

Do a quick render to test this new shader (Fig.34).

Now let's take the tower object and export the UV set to create its texture in Photoshop (Fig.35). Again, you can use your own UV (if you have done them for the previous part of the tutorial) or you can have a look at Fig.35 and try to do something similar. It's really up to you and what kind of UV layout you need to create the texture.

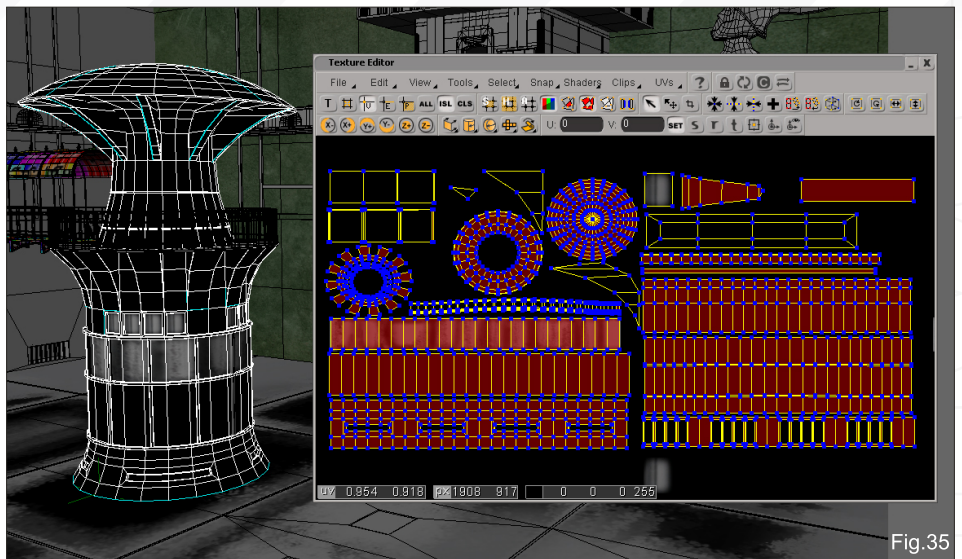


Fig.35

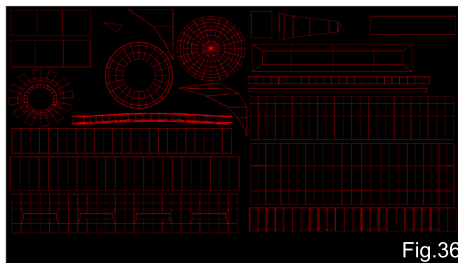


Fig.36

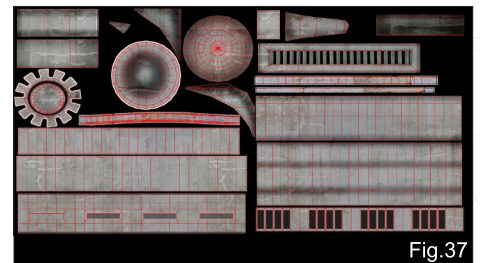


Fig.37

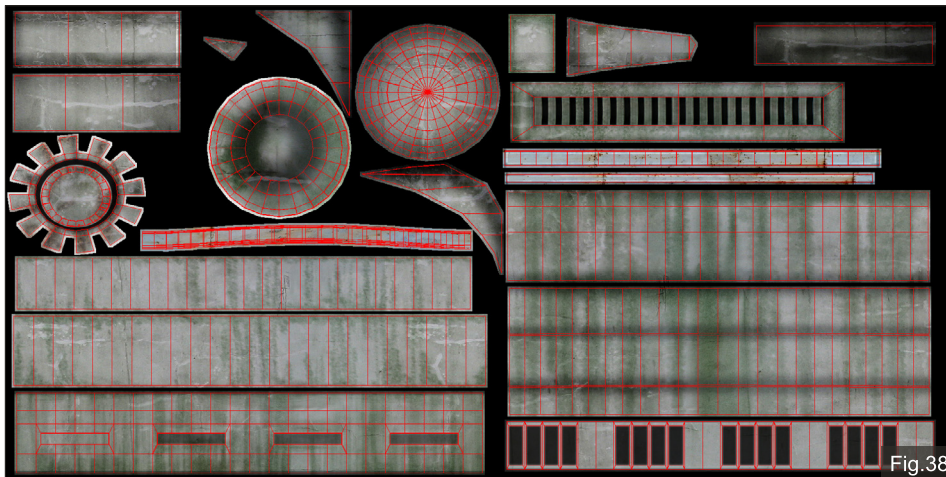


Fig.38

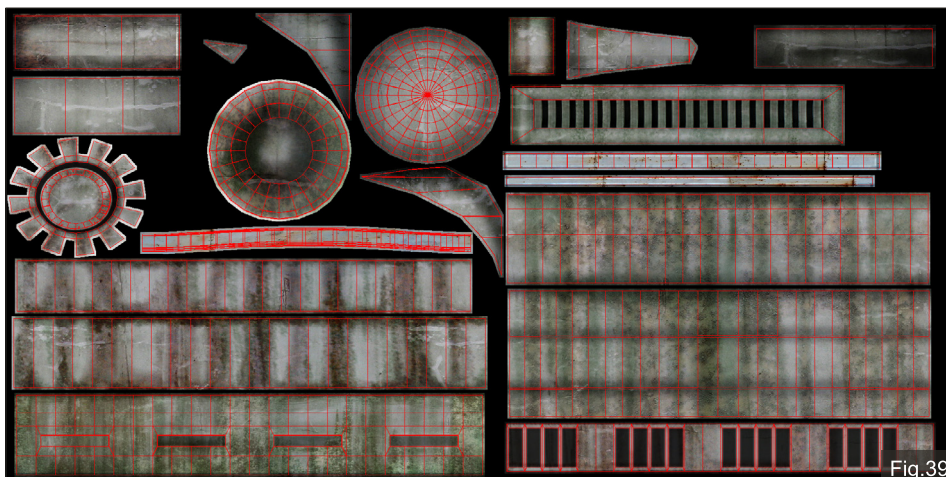


Fig.39

Open the UV stamp in Photoshop and isolate the UV lines, just like earlier (Fig.36).

Now create the basic colour layer using some of the textures included with this tutorial (Fig.37).

Create an overlay layer to make the texture look aged and weathered (Fig.38).

Now create another overlay layer to make the object look even more aged (Fig.39).

If you take a look at the concept art, you'll see that the tower has some glass parts on it (windows). So we need to create a mixing alpha texture in this case, too. The white areas will show the glass material (Fig.40).

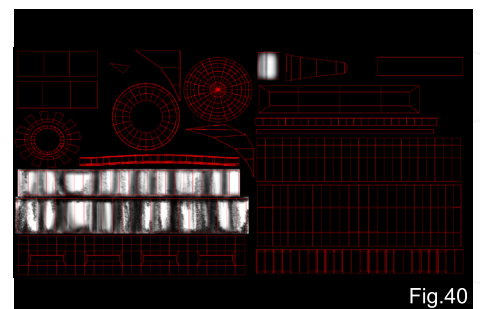


Fig.40



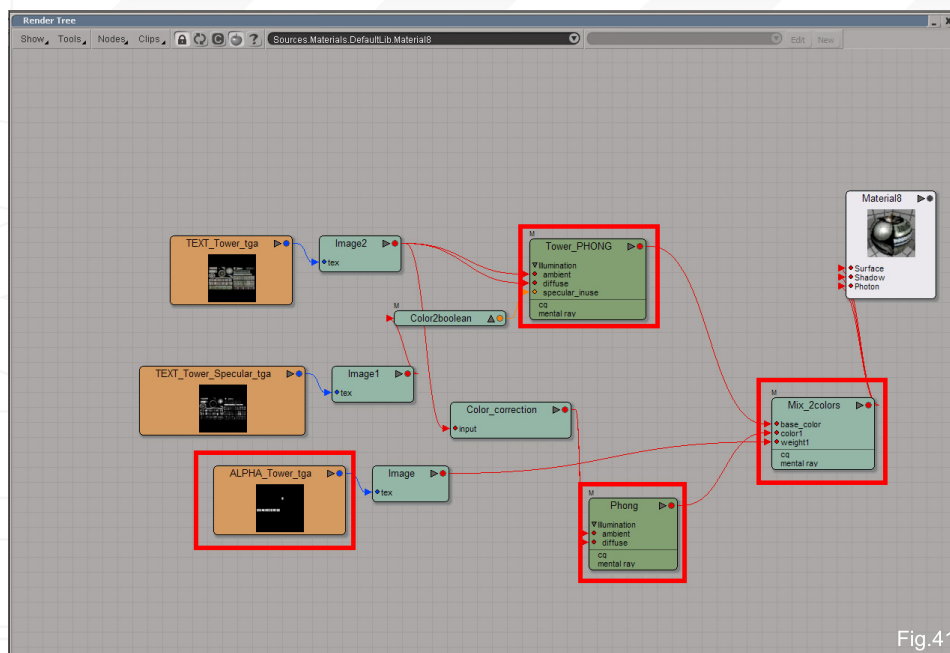


Fig.41



Fig.42

The tower shader is similar to the previous ones, but this time two Phong shaders were mixed instead of two simple textures. This is because the two materials of which the tower is composed (metal and glass) behave differently, so we needed to separate the work. A Color Correction node was also created and used to darken the original texture for the glass areas (Fig.41).

Quick render the scene again to see the result (Fig.42).

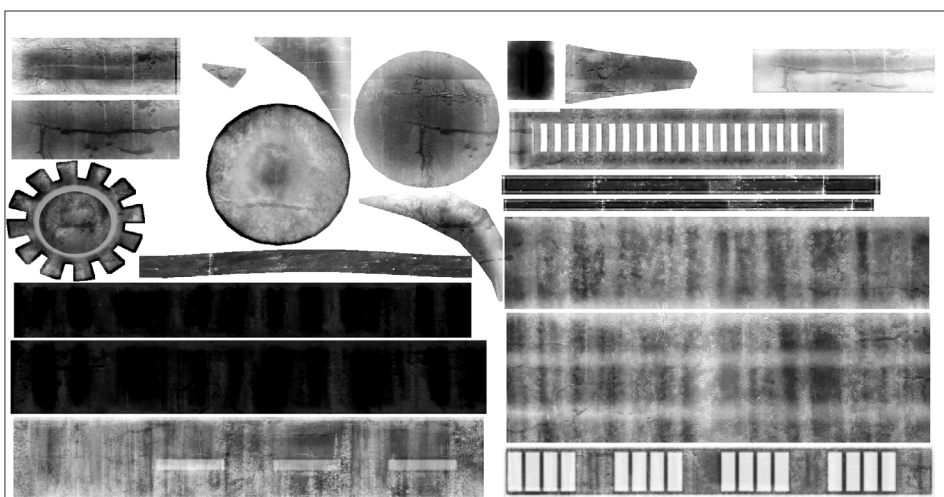


Fig.43

The colour texture was converted to greyscale in Photoshop to create the bump map. The glass area of the texture is very dark and very lightly contrasted, because we don't want the glass to have too much bump (Fig.43).

In Fig.44 you can see the final tower shader.

Now you can go on and use these same techniques on the other objects in the scene, to complete the texturing creation part. Next time we'll set up the lighting rig and the render, in order to create the final rendering.



Fig.44

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CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER  
PART 5: TEXTURING PRINCIPLES

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